MITSUBISHI ELECTRIC

ENGLISH

OTHERS

DIGITAL RECORDER

INSTALLER'S MANUAL

MODEL

DX-TL4516E
DX-TL4516E(Z)

CE

THIS INSTRUCTION MANUAL IS IMPORTANT TO YOU. PLEASE READ IT BEFORE USING YOUR DIGITAL RECORDER.

Caution and care

HEAVY OBJECTS SHOULD NEVER BE PLACED ON THE UNIT (E.G., MONITOR)

NEVER TOUCH OR INSERT ANY OBJECT INSIDE THE UNIT
Touching the inside of the cabinet or inserting foreign objects of any kind through the disc loading slot or ventilation holes not only creates a safety hazard but can also cause extensive damage.

PROTECT THE POWER CORD
Damage to the power cord may cause fire or shock hazard. If the power cord is damaged, turn OFF the MAIN switch and carefully unplug the cord by holding the main plug.
If this unit is moved with the power on status, the built-in HDD may be damaged. Confirm that more than one minute have passed since the power cord and the connecting cords were disconnected, then move this unit. Make sure to take the disc out and close the disc loading slot.

UNPLUG THE POWER CORD DURING A LONG ABSENCE
Turn off the power and unplug the power cord during a long absence.

MAINTAIN GOOD VENTILATION
Do not obstruct the many ventilation holes on the unit. For maximum ventilation, leave some space around the unit and place the unit on a hard level surface only, and ensure it is not covered during use. Heavy objects should never be placed on the unit.

WHEN NOT IN USE
When not in use, always eject the disc and turn OFF the MAIN switch.

CABINET CARE
Never use petroleum-based cleaners. Clean with a soft cloth moistened with soap and water and wipe dry.
PVC cables or leads should not be left in contact with the cabinet surface for long periods.

INSTALLATION LOCATION
For excellent performance and lasting reliability install in a location that is:-
1. Well ventilated, out of direct sunlight and away from direct heat.
2. A solid vibration-free surface.
3. Free from high humidity, excessive dust and away from magnetic fields.
4. Please ensure that the ventilation fan located on the unit's back panel is not blocked.

UNSUITABLE LOCATIONS
Placing the unit in the following places might shorten the product life:
- Extremely cold places, such as refrigerated warehouses and ice houses
- Places where excessive hydrogen sulfide is likely to be generated, such as hot-springs areas
- Places or locations with salt air environment.

THIS EQUIPMENT DOES NOT PROVIDE CONNECTION FOR USED WITH OUTDOOR OR CABLE DISTRIBUTION SYSTEMS.

NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.
DO NOT PLACE HEAVY OBJECT ON THIS UNIT.
DO NOT STEP ONTO THIS UNIT.
DO NOT PLACE ANY OBJECTS IN FRONT OF THE DISC LOADING SLOT.
The unit may drop or fall by losing its balance. It may cause injury or failure of the unit.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE. THIS APPARATUS MUST BE GROUNDED.

MAINS LEAD CONNECTION
The mains lead on this Unit is fitted with a non-rewireable mains plug, incorporating a 5A fuse. If you need to replace the fuse, use a 5A fuse approved by BSI or ASTA to BS 1362, ensuring you refit the fuse cover. If the mains plug is not suitable for the sockets in your home, and you require to remove the plug, remove the fuse, cut off the plug then dispose of the plug immediately, to avoid a possible electric shock hazard. To refit a new plug, follow these instructions; Green-and-yellow: Earth, Blue: Neutral and Brown: Live. As the colours in the mains lead of this Unit may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows.
- The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured green or green-and-yellow.
- The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
- The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

This unit complies with the requirements of the EC Directive 2004/108/EC, "EMC Directive" and 2006/95/EC, "Low Voltage Directive". The requirements for the susceptibility according to EN 55024 and the requirements for interference according to EN 55022 are observed for the operation on residential areas, business, light industrial premises and in small scale enterprises, inside as well as outside of the building. All places of operation are characterised by their connection to the public low voltage power supply system. This unit is manufactured in accordance with EN 60950-1.

Note: This symbol mark is for EU countries only.
This symbol mark is according to the directive 2002/96/EC Article 10 Information for users and Annex IV.

Your MITSUBISHI ELECTRIC product is designed and manufactured with high quality materials and components which can be recycled and reused.
This symbol means that electrical and electronic equipment, at their end-of-life, should be disposed of separately from your household waste.
Please, dispose of this equipment at your local community waste collection/recycling centre.
In the European Union there are separate collection systems for used electrical and electronic product.
Please, help us to conserve the environment we live in!

Notice about construction of the surveillance system using this unit

- This unit can be controlled by the external devices via RS-232C terminal or LAN terminal. This unit can also be used to control external devices via external terminal, RS-422/485 terminal, or RS-232C terminal. Owning to these functions, this unit flexibly applies to the high grade security system, but the whole surveillance system may be affected by the malfunction of this unit or the external devices depending on the setting contents of this unit, the connection with the external devices, or combination between this unit and the external devices.
- When configuring a surveillance system using this unit, it is recommended to confirm first that this unit operates normally with the other devices connected.
- It is recommended to copy or back up the important recorded contents.
- Damages rising out of any operational error of the surveillance system or loss of the recorded data or any other damages because of any user malfunction of this unit are not covered.
- Do not use the notification function of this unit for making critical judgement nor any purpose related to human lives.
- When this unit cannot recognize the external device which is being used for recording due to the power failure, decreased voltage, or other failures, the recording point may be moved to the internal HDD of this unit or the other external HDD. To prevent occurrence of such problem, it is recommended to use uninterruptible power supply.
- If the power plug is disconnected or the breaker switch is turned off during recording, HDD may be damaged or playback of recorded data may become impossible.
  If the breaker switch is turned on and off everyday, set the timer recording to be performed only for the period that the breaker is on and do not turn off the breaker during recording.

There may be cases when the unit's built-in motion detection function does not operate properly due to external condition, video input signal, or other factors.

The user will not be indemnified for problems (e.g., recording failure or playback failure) that occur with either the unit or a connected device during operation. It is recommended to back up the important recordings regularly as a precaution against possible breakdowns and accidents.

Recordable time and product warranty
Continuous recordable time and the estimated time displayed on the menu screen indicate the continuous time of recording operation of this unit. They indicate the period neither for product warranty nor that for reliability of used parts.

- This unit uses a built-in HDD, which is a precision device. Handle this unit with sufficient care.
- Do not subject this unit to vibrations or shocks. This may cause trouble specially when the power of the unit is turned on or when the HDD is being accessed, and sufficient care is required.
- Do not disconnect the power plug while the power of the unit is turned on or while recording or playing.
- For early detection of faults, we recommend that you request inspection once a year.

The HDD and cooling fan of this unit are driving parts. For stable recording, it is recommended that both of these parts are replaced every 30,000 hours.
(This interval is for reference purpose only and does not indicate the warranty period of the parts.)

DISCLAIMER

In any event, Mitsubishi assumes no responsibility or reliability for the following:

1. Disassembly, repair, or alteration of this unit by user or installer.
2. Failure or breakdown in or damage to this unit resulting from misuse or careless handling by user or installer.
3. Inconvenience or damages arising out of inability to display or record pictures due to any reason or cause other than breakdown or failure in this unit.
4. Failure in this unit due to combination with other equipment manufactured by a third party or inconvenience or damages resulting from such failure.
5. Inconvenience, damages, or claims arising out of breakdown in this unit or loss of recorded video data due to replacement of the built-in HDD by user or installer.
6. Inconvenience or damages arising out of breakdown in this unit or inability to display or record pictures due to natural disaster including earthquake and storm.
7. Inconvenience, damages, or claims arising out of breakdown in this unit or loss of recorded video data due to impact or vibration to the built-in HDD or an environmental factor such as temperature at the installation site.
8. Demand for damages or other claim of infringement of privacy if the pictures monitored or recorded by user become public or are used for any purpose other than surveillance for whatever reason.

INSTALLATION LOCATION AND HANDLING

- Place this unit horizontally and in a stable place. If this unit is not placed correctly and used in an unstable place, the unit may be damaged such as removal of the DVD/CD disc.
- Do not place this unit close to other electronic or magnetic equipment. This will avoid video and audio distortion.
- When a monitor and this unit are placed vertically, the pictures may be distorted or DVD/CD disc may not be ejected.
- Do not let stick your hands into the disc loading slot. You may get your hand caught in the slot and may got injured. If you get your hand caught, do not get out of the slot by force. Contact your dealer after turning off the power and disconnecting the plug.

DVD/CD DISC

- Do not use the disc cracked, deformed or repaired with adhesive. The disc may fly into pieces and cause injury.
- Do not touch the playback surface when holding the disc.
- When dew condensation occurs on the disc, wipe the surface off before use.
- Dirt such as fingerprints or dust causes the deterioration of the picture quality and audio quality. Gently wipe the DVD/CD disc from the center to the outside with a soft cloth.
- When the disc is very dirty, soak a soft cloth with water and screw water of it, wipe off the dirt lightly, then wipe with a dry cloth.
- Do not use solvent such as benzine and thinner, a record cleaner, and static-stopper. They may damage the disc.
- Do not use the disc described below. They may damage the disc itself or this unit.
  Discs on which a piece of paper or sticker is put, or a disc damaged.
  Discs which the label is peeled or a disc with oozing.
  Discs cracked, deformed, or repaired with adhesive.
- Store the disc in the specified casing, avoiding the following places.
  Places where it will be subjected to direct sunlight.
  Places with excessive dust.
  Places where it will be subjected to high temperatures or high humidity.
- DVD movie (cinema) or personal recorded picture cannot be played back on this unit. Only the pictures recorded on this unit can be played back.
- Do not use the disc which has been used on the personal computer, failed to be copied, or stopped during copying due to the power failure because they may cause malfunction of the unit.
- Although you can copy the data on DVD/CD with this unit and playback that data on the personal computer using the supplied application software, not all the personal computers or DVD/CD drives are ensured for proper playback of such data.

MAINTENANCE OF THE LENS FOR RECORDING/PLAYBACK (LASER PICKUP)

- When any dust adheres on the lens for recording/playback, the picture may be distorted or the audio may skip. Also normal recording or playback may not work. Ask your dealer how to correct this problem.
  Be careful, do not use the commercial lens cleaning disc, they may damage the lens.

PRECAUTION CONCERNING EXTERNAL DEVICE

- The various external HDDs can be connected to this unit in order to expand the memory or to use as the copy device. However, during recording or playing back a picture at high rate, some pictures may be missed due to the slow rate of data transfer or the slow speed of response from the external device connected. Be sure to check the operation sufficiently in advance.
- Do not use the power control function of the external device which uses bus power of this unit.
- The external device to be used may be unsuitable for the operation you want to set. It is recommended to consult your dealer when using the external device.

Warning

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

CLASS 1 LASER PRODUCT

Note

Thank you for purchasing Mitsubishi digital recorder DX-TL4516E/DX-TL4516E(Z) (hereinafter referred to as “Product”). Before using this Product, please be sure to read the Software License Agreement on page 7 of the user's manual with regard to the software contained in this Product (hereinafter referred to as “Licensed Software”). **By using this Product, you are agreeing to be bound by the terms and conditions of the following Software License Agreement.**

This Product contains software programs that are covered by GNU General Public License or GNU Lesser General Public License. Such software programs are excluded from Licensed Software and not covered by the following Software License Agreement. For the terms and conditions for use of the software programs covered by GNU General Public License or GNU Lesser General Public License, please see “Notice about software to which GNU GPL/LGPL is applied”*.

In addition, this Product contains “Apache” and “OpenSSL (including “Original SSLeay” library).” These software programs are also excluded from Licensed Software and not covered by the following Software License Agreement. For the terms and conditions for use of these software programs, please see “Notice about Apache software”* and “Notice about OpenSSL software”*.

Each of “Berkeley Database,” “agetty,” “expat,” and “zlib” contained in this Product is other open source software. These software programs are excluded from Licensed Software and not covered by the following Software License Agreement. For the terms and conditions for use of these software programs, please see “Notice about other open source software”*.

* The documents of “Notice about software to which GNU GPL/LGPL is applied,” “Notice about Apache software,” “Notice about OpenSSL software,” and “Notice about other open source software” are contained (in the format of electronic files as notice_GPL_LGPL_ja.pdf, notice_Apache_ja.pdf, notice_OpenSSL_ja.pdf, and notice_other_ja.pdf) in the “OpenSoft_License” folder in the CD supplied with this Product.

Features

DX-TL4516E/DX-TL4516E(Z) is a digital recorder that is equipped with HDD as its main memory and 16ch triplex multiplexer. Addition to these features, this system has a very sophisticated video signal and data processing technique that provides high quality picture, stable operation and reliability. The graphical user interface and pointing devices make the operation very easy and comfortable in live monitoring and also in the handling of data from recording to export. The system offers excellent performance and has features to suit many video surveillance applications.

Refresh rates of 800pps*/system
Thanks to the newly developed multiplexing circuit, every camera can be viewed at 50 pps refresh rate in all screen formats.
pps* : picture per second

Triplex
User can view live and playback pictures on the same monitor in all screen multi-split layouts without disrupting recording.

Dual Multiplexer Outputs
The DX-TL4516E/DX-TL4516E(Z) has two video outputs (Output A / B), and both of the outputs can show single-screen, 4, 9, 10, 13 and 16 split-screen, Switched Cameras, Alarmed Camera in live mode and Recorded pictures. On Screen Menu are shown only on monitor Output A. It is also possible to view playback pictures of different cameras at the same time with these two video outputs.

Covert Camera Function
It is possible to hide pictures of selected cameras that are installed in sensitive areas and should only be viewed by authorized personnel. It can be switched by <Multiplexer Setting>.

GUI
MENU, GUI (Graphical User Interface), guides the operators to their desired menu pages quickly. If the users need additional information on MENU functions, just press the HELP key and instructions will appear on screen. The menu supports English, German, French, Spanish, Italian, and Russian. Function keys on the front panel or USB mouse can operate the menu on the DX-TL4516E/DX-TL4516E(Z).

Recording rate up to 100 pps/system
Because of the new recording circuit and compression chip, the maximum recording speed is 100 pps in total, this means that the system can record pictures with speed of up to 6.25 pps on all 16 channels. With this speed recorded pictures are seen by the eye as real-time.

JPEG2000
The system uses JPEG2000 compression. JPEG2000 is the standard and ideal compression method for still pictures. Because pictures are compressed to a user defined file size one by one, the estimated recording time calculated by the system automatically is very accurate. Special playback search functions and transmission over network also benefit from this compression method. File sizes for each picture quality are minimized to improve storage efficiency over previous models.

Individual Recording Setting
Recording speed and picture quality (picture file size) can be set for each camera individually, it is also possible to set alarm recording setting in addition to normal recording setting. By adjusting the recording speed and picture quality, it is possible to use HDD storage space efficiently.

Audio Recording
Audio input is featured. The audio such as cash register operation and conversation with customers can be recorded clearly together with the monitoring pictures.

Copy
User can make a copy of recorded picture data by using built in CD/DVD Drive on the DX-TL4516E/DX-TL4516E(Z). Or, also you can copy the data to other digital media such as HDD and USB Memory through Serial Bus Interface.

Microsoft is either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
All other company and product names appearing herein are the property of their respective owners.

Contents

Caution and care 2
Note 5
Features 6
Contents 8
Flowchart 10
Flowchart for connection and settings 10
Major operations and their functions 12
Front view 12
Front view (inside of the door) 14
Loading/Ejecting a DVD or CD 15
Rear view 16
Connections 18
Connecting to CCTV camera, monitor, and sensor 18
Alarm recording connection 19
Clamping the cables 20
Connecting to an analogue video cassette recorder 20
Optional items 21
Recommended items 21
Precaution concerning connection with HDD extension unit 21
How to set the menus 22
Setting the menus 22
Setting the menu using a mouse 22
Setting the menu using the front panel buttons 22
Displaying a menu screen 23
Closing a menu screen 23
Selecting an item 23
Inputting numbers 24
Setting parameters 24
Symbols in the menus 25
Setup Wizard 26
Setup Wizard 26
Menu chart 28
Menu chart 28
User Menu 28
Setup Menu 30
System Menu 37

User Menu

Search 39
Selecting the search function 39
Select Source Device 39
Search by Time and Date 39
Search by Alarm List 39
Find data storage location 39
Search by Book Mark 39
Search by Motion 40
Copy 41
Copy Data to Copy 1 Drive/Set Copy 1 Drive 41
Copy Data to Copy 2 Drive/Set Copy 2 Drive 42
Copying the data of this unit to a video cassette 43
Playback software 44
Information 46
Information 46
Protect Data 47
Protect Data 47
PTZ Control 48
PTZ control using the menu 48
PTZ control using the front panel buttons 48

Setup Menu

Recording 49
Settings concerning normal recording and alarm recording 49
Pre-alarm recording 49
Set Recording Pattern A (Normal/Timer) to D (Timer) 49
Alarm Input 51
Emergency Recording Setup 52
Emergency recording 52
Long pre-alarm recording 53
Audio Recording Setup 53
Timer 54
Timer 54
Overlapped timer settings 55
Motion Det 56
Set Motion Detection Pattern A/Set Motion Detection Pattern B 56
System 58
Time/Date Setting 58
Menu Language Selection 58
Rear Terminal Setting 58
Mode Out Settings 58
Call Out Settings 59
Key Sound 59
Buzzer 59
Password Setting 60
SIMPLE LOCK 60
Activating the simple lock 60
Releasing the simple lock 60
PASSWORD LOCK 60
Using “Operation control” of PASSWORD LOCK (level 1 to 3) 60
Registering the PASSWORD 60
Activating the PASSWORD LOCK 61
Releasing the PASSWORD LOCK 61
Changing the PASSWORD 61
Changing the lock mode from PASSWORD LOCK to SIMPLE LOCK 61
Multiplexer function related button operations/ operation table 62
Camera number button operations 62
SPLIT buttons operations 62
SEQUENCE button operations 62
DIGITAL ZOOM button operations 62
The function of the SPLIT, SEQUENCE, DIGITAL ZOOM, and camera number buttons 63
Multiplexer Setting 64
Output A Settings 64
Output B Settings 65
Alarm Display Setting 66
Covert Camera Setting 66
On Screen Display Setting 67
On Screen Information 67
Camera Title 67
Recorder Title 68
Monitor Output Adjust 68
Reset to Factory Setting 68
Menu Data 69
Load Menu Data 69
Save Menu Data 69

ENGLISH

System Menu

COM/LAN **70**
- RS-232C Setting 70
- RS-485 Setting 70
- LAN (Communication) Setting 71

PTZ Setting **72**
- PTZ Camera Configuration 72
- Configuration Check List 72

Service Info **73**
- System Log List 73
- Elapsed Operating Time 73
- Disk Information 73

Restore **74**
- Restore Data to Main HDD from Drive 1/2/ Export Drive 1/2 Configuration 74

Memory **75**
- Add/Remove HDD Device 75
  - Notes for using the external device 76
  - Attaching the HDD and setting the ID number 76
  - The order of recording/playback when internal and external HDDs are registered as the main device 76
- Add/Remove DVD/CD Drive 76
- Data Management Setting for Main Memory 77
- Recording Data Readout Setting 78

Data Clear **79**
- Main Storage Memory 79
- Copy 1/Copy 2 79

Other convenient functions **80**
- Various playback functions 80
  - Playing still frames 80
  - Shuttle viewing/direct shuttle viewing 80
  - Shuttle hold 80
  - Frame-by-frame playback 80
  - Reverse playback 80
  - High-speed fast-forward/high-speed rewind 80
  - Changing playback intervals 81
  - Simultaneous playback during recording 81
  - Playback the latest recorded contents 81
  - Triplex playback 81
- Registering the picture 82
  - Registering a bookmark 82
  - Picture copy 82
- Functions of the unit in case of power failure 83
  - Power failure compensation circuit 83
  - Power failure reset recording 83
  - Log function when power failure occurs while the unit is in operation or the MAIN switch on the rear of the unit is turned OFF 83
- RESET button 83

Operation examples **84**
- Operation example 1 84
- Operation example 2 85
- Operation example 3 86
- Operation example 4 88

Basic operations **90**
- Basic multiplexer functions 90
  - Multiplexer buttons 90
- Basic manual recording 91
  - Setting the recording rate and picture grade for normal recording 91
- Basic playback 92
- Basic search 93
  - Search by Time and Date 93
  - Search by Alarm List 94

Communications by Web Browser **95**
- Communications by Web Browser 95
  - The personal computer product requirements 95
  - Connections 95
- Login 95
- Main Menu 96
  - Live Monitoring 97
  - Playback 98
    - Time Search 98
    - Alarm List Search 99
    - Image Search 99
  - Configuration Menu 99
    - User Registration 100
    - Recorder Title & Camera Titles 101
    - E-mail Setup 102
    - Access Mode Setup 103
    - Clock Setup 103
  - Logout 104
  - Change Login User 104

Recording time table **105**
- Continuous recording time table 105

Troubleshooting **106**

Warnings and CALL OUT output **108**
- Warnings and their appropriate countermeasures 108

Check sheet **110**

Glossary **126**
- Glossary 126
- Relation of recording operation to the number of cameras and recording rate settings 126

Specifications **127**

How to read this manual

Viewing displays

(Refer to this information when operating):
Reference information concerning operation

(Caution required):
Cautionary items concerning operation

☞ (See reference page):
Reference item and page number

Finding desired information

There is a “Contents” at the beginning of this manual. In addition, reference pages are indicated throughout this manual.

Troubleshooting

Read Troubleshooting (pages 106,107) for possible remedies to the problem.

Menu settings

See Check list (pages 110-125) for available setting parameters for each menu.

Flowchart

■ Flowchart for connection and settings

This is a flowchart of connection and settings for making an alarm recording with timer recording and then search, playback, and copy the recorded data.

Connections
- **Connections for camera, monitor, and sensor.**
  ☞ See "■ Connecting to CCTV camera, monitor, and sensor" on page 18.
- **Connection for the alarm recording.**
  ☞ See "■ Alarm recording connection" on page 19 and "■ Rear view" on page 16.

▼

Boot-up the unit

▼

When not executing Setup Wizard:

☞ See "■ Setup Wizard" on page 26.

❗Only when the unit is turned on for the first time, the <Setup Wizard> screen is displayed automatically. It is not displayed next time.

- Set the present time and HDD settings in each menu manually. ("■ Time/Date Setting" on page 58. Set the present time. "■ Data Management Setting for Main Memory" on page 77. Set the alarm area.)

▼

Recording

Connections
- **Connections for camera, monitor, and sensor.**
  ☞ See "■ Connecting to CCTV camera, monitor, and sensor" on page 18.
- **Connection for the alarm recording.**
  ☞ See "■ Alarm recording connection" on page 19 and "■ Rear view" on page 16.

▼

Boot-up the unit

▼

When executing Setup Wizard:

☞ See "■ Setup Wizard" on page 26.

❗Only when the unit is turned on for the first time, the <Setup Wizard> screen is displayed automatically. It is not displayed next time.

- The language, present time, HDD configuration, and recording settings are set automatically by following the instructions in the menu.

▼

Making the initial menu settings
- **Setting the present time display mode.**
  ☞ See "♦ On Screen Information" on page 67.
- **Setting the audio recording.**
  ☞ See "■ Audio Recording Setup" on page 53 and "■ Continuous recording time table" on page 105.

▼

Making the HDD settings
- **Setting the repeat recording.**
  ☞ See "■ Data Management Setting for Main Memory" on page 77.
- **Setting the remaining HDD capacity.**
  ☞ See "Low Memory Alarm Setting" on page 58
- **Setting the CALL OUT.**
  ☞ See "♦ Call Out Settings" on page 59.
- **Setting the buzzer.**
  ☞ See "♦ Buzzer" on page 59.

▼

Making the multiplexer settings
- **Making the split screen settings.**
  ☞ See "■ Multiplexer Setting" on page 64.
- **Making the sequence setting.**
  ☞ See "■ Multiplexer Setting" on page 64.

▼

Setting other various functions
- **Setting the camera title/recorder title.**
  ☞ See "♦ Camera Title" and "♦ Recorder Title" on pages 67, 68.
- **Setting the display mode.**
  ☞ See "♦ On Screen Information" on page 67.
- **Setting the output signal of the unit status.**
  ☞ See "♦ Mode Out Settings" on page 58.

▼

Setting the motion detection
- **Selecting the camera number.**
- **Setting the detection areas.**
- **Setting the sensitivity.**
- **Setting the minimum number of dots for starting the motion detection operation.**
- **Setting the detection interval.**
  ☞ See "Motion Det" on page 56.

▼

Setting the timer recording
- **Setting the normal/alarm recording or pre-alarm recording.**
  - Setting the recording rate/picture grade for normal recording.
  - Setting the recording rate/picture grade for alarm recording.
  - Setting the motion detection recording.
  - Selecting the camera selection during the alarm recording and trigger for alarm recording.
  - Setting the alarm recording time.
  - Setting the pre-alarm recording time.
  - Setting the PTZ camera preset.
    ☞ See "■ Set Recording Pattern A (Normal/Timer) to D (Timer)" on page 49.
- **Setting the timer program.**
  - Setting the holiday.
  - Selecting the timer program number.
  - Making the timer recording settings.
    - Selecting the day of the week.
    - Selecting the start time.
    - Selecting the end time.
    - Selecting the program mode.
    - Selecting the motion detection mode.

    (• Selecting the special day of the week.)
    ☞ See "Timer" on page 54.

▼

Timer recording is executed and completed
☞ See "■ Warnings and their appropriate countermeasures" on page 108.

▼

Searching the recorded data
- **Setting the device to be searched.**
  ☞ See "■ Select Source Device" on page 39.
- **Setting the alarm list search.**
  ☞ See "♦ Search by Alarm List" on page 94.

▼

The search is completed and the search result is displayed

▼

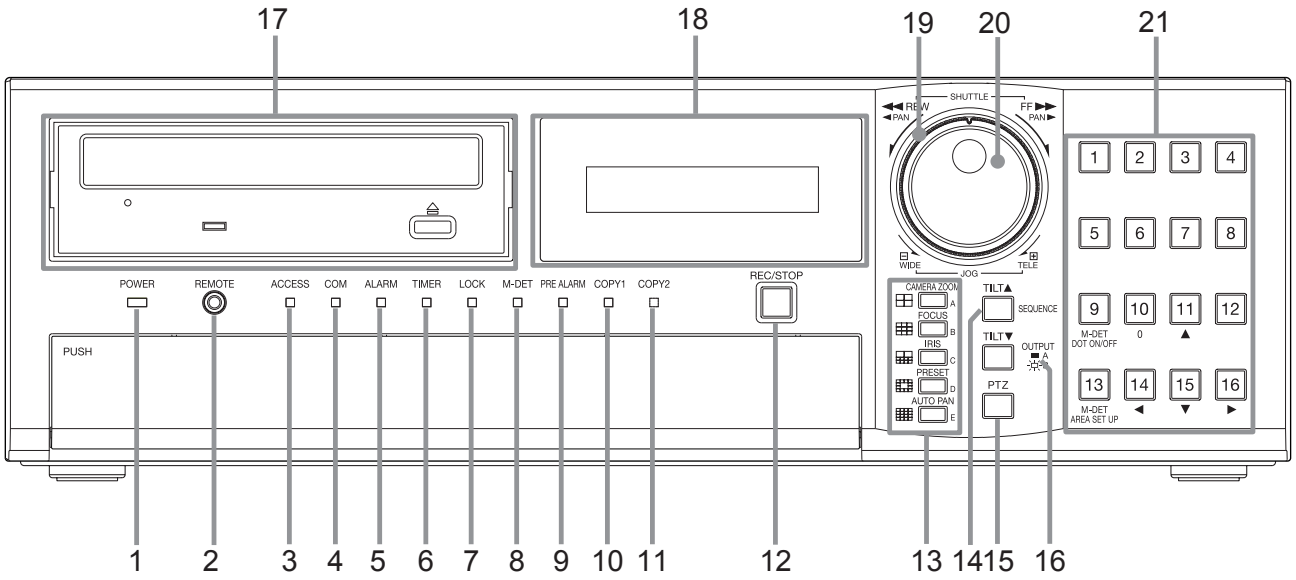
Playback the search result
- **Selecting the camera number to be played back.**
  ☞ See "■ Multiplexer Setting" on page 64.
- **Selecting the split/sequence screen.**
  ☞ See "■ Multiplexer Setting" on page 64.
- **Playback the recorded data.**
  ☞ See "■ Basic playback" on page 92.
- **Selecting the playback speed.**
  ☞ See "■ Various playback functions" on page 80.

▼

Copy the data
- **Setting the copy device.**
  ☞ See "■ Add/Remove HDD Device" or "■ Add/Remove DVD/CD Drive" on pages 75, 76.
- **Setting the copy function.**
  ☞ See "■ Copy Data to Copy 1 Drive" or "■ Copy Data to Copy 2 Drive" on pages 41, 42.

Major operations and their functions

■ Front view



1. POWER indicator
Illuminates when the unit is ON (MAIN switch on the rear is ON and the POWER button in the front has been pressed.) Turns off when the unit is in stand by mode (only rear switch is ON) or MAIN switch on the rear is turned off. It takes about 1 or 2 minutes from pressing the POWER button to switch the unit ON. When the unit is in operational transition such as boot-up, the indicator flashes and other operations are not accepted.

2. REMOTE jack
Input connector for optional wired remote controller.

3. ACCESS indicator
Illuminates during accessing to internal HDD or peripheral recording devices. Press the POWER button after the ACCESS indicator is turned off and “POWER OFF” is displayed on the LCD display.

4. COM (COMMUNICATION) indicator
Illuminates when establishing the communication with personal computer.

5. ALARM indicator
Illuminates during alarm recording.

6. TIMER indicator
Illuminates during timer recording or timer recording stand-by mode.

7. LOCK indicator
Illuminates while simple lock or password lock is turned on.

8. M-DET indicator
Illuminates when the motion detection function is activated.
Flashes during motion detection recording.

9. PRE ALARM indicator
Illuminates during pre-alarm recording.
It also illuminates when pre-alarm recording has been set.

10. COPY 1 indicator
Illuminates while performing copy 1 operation.
Flashes when starting or ending the copy 1 operation.

11. COPY 2 indicator
Illuminates while performing copy 2 operation.
Flashes when starting or ending the copy 2 operation.

12. REC/STOP button
Starts recording. The button lights up during recording.
When pressing the button for more than 2 seconds, the recording stops and the light turns off.
When pressing this button for more than 2 seconds during alarm recording, recording stops.
During timer recording, recording does not stop even if the button is pressed.

13. SPLIT screen buttons (⊞, ▦, ▣, ▩, ▦)

Selects split screen to be displayed.
Used for the menu settings.

14. SEQUENCE button
Used to select and display the sequential screens.

TILT ▲ button
When pressing the button during PTZ mode, the angle of the camera adjusts in the upward direction.

15. PTZ (Pan, tilt, and zoom) button
Switches this unit to PTZ mode to control the PTZ camera connected.

Camera control buttons
The following buttons control PTZ motion during PTZ mode. This unit must be in single screen display.

CAMERA ZOOM button
Adjusts the camera zoom. Press this button and then turn JOG to the left (wide) or right (tele) to adjust the camera zoom.

FOCUS button
Adjusts the focus of a camera. Press this button and then turn JOG to the left (far) or right (near) to adjust the focus.

IRIS button
Adjusts the iris of a camera. Press this button and then turn JOG to the left (close) or right (open) to adjust the iris.

PRESET button
Presets up to 16 viewing positions. Press this button and then press the camera number button within 3 seconds to preset the points.

AUTO PAN button
Activates auto pan of the camera connected.

16. OUTPUT A/B button
Switches the multiplexer output between A and B. The light turns off when OUTPUT A is selected and on when OUTPUT B is selected. It affects both, playback and search functions. The menu cannot be displayed when this button is illuminated.

TILT ▼ button
When pressing the button during PTZ mode, the angle of the camera adjusts to the downward direction.

17. Disc loading slot
Accepts DVD disc or CD to copy/back up.
The supported discs are:
DVD-RW, DVD-R, CD-R, and CD-RW

OPEN/CLOSE ⏏ button
Opens or closes the disc loading slot.

BUSY indicator
Flashes or illuminates during recording or playback.

18. LCD display
Displays the present time and the status of the unit.

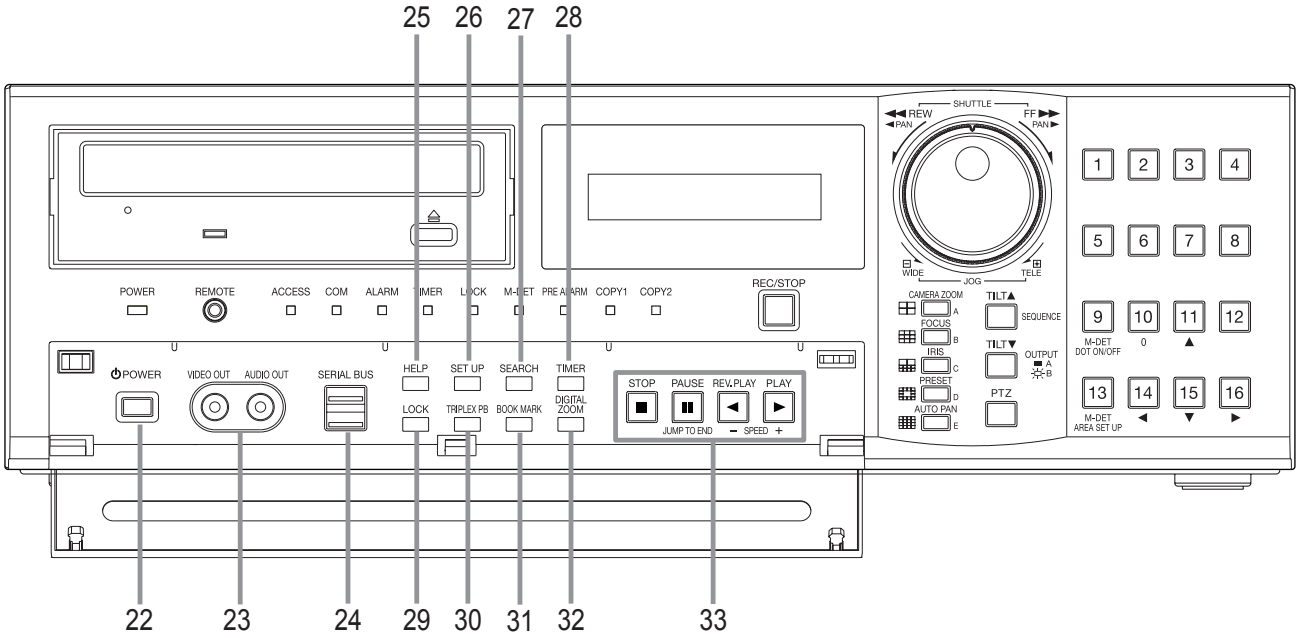
19. SHUTTLE ring
Adjusts the playback speed, and rewinds or forwards the recorded pictures.
Pans the camera.

20. JOG dial
Forwards or rewinds the picture during playback (frame-by-frame).
Uses for controlling PTZ cameras connected.

21. Camera number buttons (1 to 16)
Displays the picture supplied from the camera connected. The number of the button corresponds to that of the CAMERA IN connector on the rear panel. The button of the displayed camera number lights up.
Used for the preset function of the PTZ camera control.
Used for the menu settings.

M-DET DOT ON/OFF/M-DET AREA SET UP (camera number 9 and 13)
Used for setting the detection area of the motion detection function.

■ Front view (inside of the door)



22. POWER button

Turns on the unit (MAIN switch on the rear of this unit must be ON). When the button is pressed again, the unit switches to stand-by mode. The POWER and other button operations are not accepted while the POWER indicator is flashing.

23. ANALOGUE OUTPUT connectors

VIDEO OUT connector
Output connector for video signal (RCA pin).

AUDIO OUT connector
Output connector for audio signal (RCA pin).

24. SERIAL BUS port

Input and output port for the devices equipped with SERIAL BUS connectors. Bus power cannot be used.

25. HELP button

Displays the help menu (for caution on use, operating method, and explanation on functions).
Used when the warning message is displayed.
This button can be used even while the menu screen is displayed.

26. SET UP button

Displays the <User Menu>.

27. SEARCH button

Displays the <User Menu> with search menu opened.

28. TIMER button

Sets the unit to timer recording/stand-by mode and lights up the TIMER indicator. When pressing this button for more than 2 seconds, timer recording/stand-by mode is cancelled and the TIMER indicator is turned off.

29. LOCK button

Activates simple lock or password lock when pressing while the MAIN switch (main power) on the rear panel is turned on and lights up the LOCK indicator. Moreover, the password can be set on the <Password Setting> (☞ page 60).

30. TRIPLEX PB button

In split screen display, inserts the playback picture of needed camera while also displaying the live picture from other camera.

31. BOOK MARK button

When pressing this button during frame still playback of the single screen display, the selection screen appears to register the bookmark or to copy the picture being displayed.

32. DIGITAL ZOOM button

Pressing this button in single screen display displays the screen in 100 % magnification (live or playback). Pressing the camera number button (11, 14, 15, or 16) moves the magnification centre point.

33. Operation buttons

STOP button
Stops playback.

PAUSE/JUMP TO END button
Switches the playback to still frame playback when pressing this button during playback. Resumes playback when pressing the button again. The button lights up during still frame playback.
When pressed during shuttle playback, the set playback speed is maintained even when letting go of the SHUTTLE ring. (Shuttle hold)
When pressed during the unit is in stop mode of playback, the frame still picture around the end point of the latest recording appears. (Jump to end)

REV. PLAY (REVERSE PLAY) button
Starts reverse playback. The button lights up during reverse playback.

PLAY button
Starts playback. The button lights up during playback.

SPEED (+ and –) button
Switches the playback interval speed during normal or reverse playback.

■ Loading/Ejecting a DVD or CD

Before using a disc, read the cautionary notes described in the manual included with the disc.

step**1.** Press the OPEN/CLOSE button.
- The disc loading slot opens.

[When loading the disc:]

step**2-1.** Place the disc onto the tray.
- Make sure that the disc is inserted properly with the label side up.

[When ejecting the disc:]

step**2-2.** Eject the disc from the tray.

step**3.** Press the OPEN/CLOSE button again.
- The disc loading slot closes.

Do not eject the disc while copying/restoring, saving/loading menus, or immediately after inserting the disc. The disc or the contained data may be damaged.

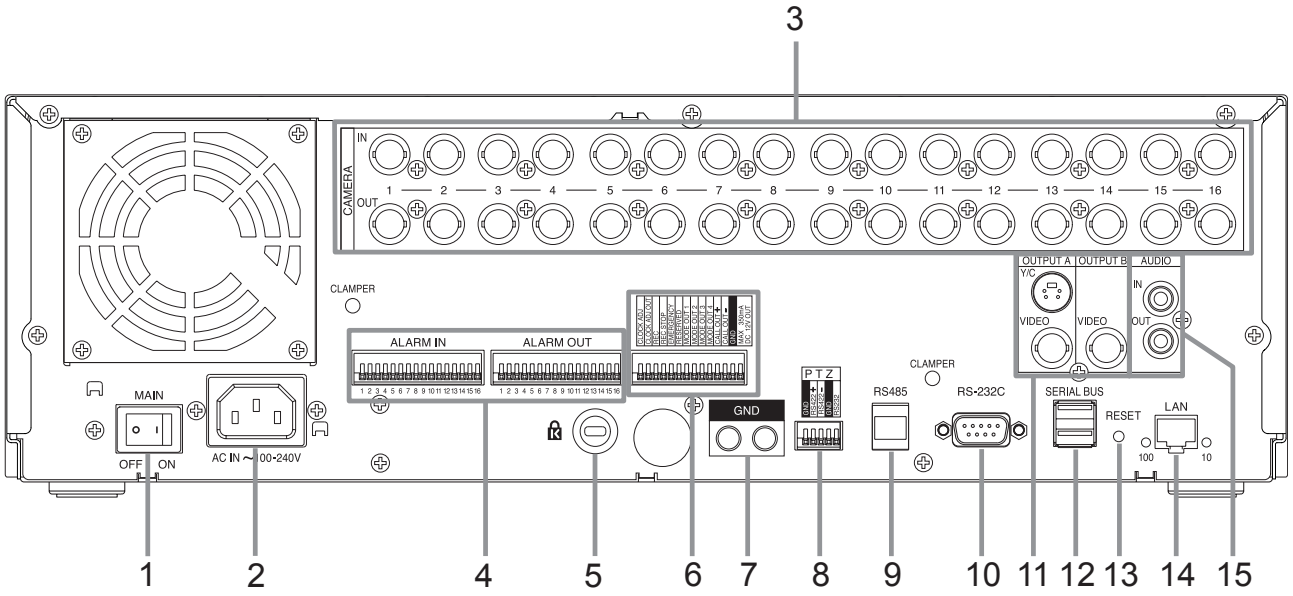
Use the disc which we recommend. When a disc other than the recommended is used, the data may not be read or written correctly. Consult your dealer for recommended usable discs.

When using DVD-RW or CD-RW disc, initialize the disc by <Data Clear> (☞ page 79) before using.

Although you can copy the data on DVD/CD with this unit and playback that data on the personal computer using the supplied application software, not all the personal computers or DVD/CD drives are ensured for proper playback of such data.

Before using the DVD drive, check whether that the drive supports the medium to be used. It is recommended to use the DVD-Multi drive when you playback the data on the personal computer.

■ Rear view



1. MAIN switch

This is the main power switch. To use this unit, set this switch to ON. Otherwise, the front power button does not turn the unit on/off.

2. AC power socket

Used to connect the power cord. Earth terminal is used for safety. Use the 100 to 240 V outlet with ground terminal.

- This unit must be earthed at all times. Never connect this unit to a power outlet which does not have an earth terminal.
- Use the supplied AC power cord.

3. CAMERA connectors

- Do not connect superimposed voltage camera because it can cause damage to the unit.

CAMERA IN connectors
Input connector for video signal of camera (BNC connector).

CAMERA OUT connectors
Output connector for video signal of camera (BNC connector). If the MAIN switch is turned on, the signal from CAMERA IN connector is looped out to this connector.

4. ALARM IN terminals

Input terminals for alarm signal. Alarm signal input is acceptable once a second. However, when multiple signals are input at the same time, not all the signals may be acceptable.

ALARM OUT terminals
Output terminals for alarm signal. This terminal outputs signal for about 2 seconds when alarm or motion detection is input to each sensor connected.

5. Keyhole for anti-theft lock

Used to connect a commercially available anti-theft cable manufactured by Kensington.

6. I/O terminals

CLOCK ADJ terminal
Input terminal to set the present time. Time display is adjusted to the nearest hour (00 minutes 00 seconds) when this terminal receives the signal.

- The on-screen clock is reset to the nearest hour by applying a signal input of the CLOCK ADJ terminal. For example, if the present time is 11:29:59, it is reset to 11:00:00, and if the present time is 11:30:00, it is reset to 12:00:00.

CLOCK ADJ OUT terminal
Output terminal to set the clock of the connected recorders to the nearest hour (00 minutes 00 seconds) in sync with input of CLOCK ADJ.

REC terminal
Input terminal to start recording. This terminal is not available during timer recording.

REC STOP terminal
Input terminal to stop recording. This terminal is not available during timer recording.

EMERGENCY terminal
Input terminal to start emergency recording immediately.

MODE OUT 1 to MODE OUT 4 terminals
Output terminal to inform the current mode of this unit. Select the mode of the unit to be output in the <Mode Out Settings> (☞ page 58).

CALL OUT + terminal/CALL OUT – terminal
This is an isolation output terminal. Information to be externally output consists of the selectable items which are output depending on the CALL OUT settings made in the <Call Out Settings> (☞ page 59) and the fixed items which are output regardless of the menu setting.

DC 12 V OUT terminal
Output the voltage only when both the MAIN switch and POWER button are turned ON. The maximum electric current is 350 mA.

7. GND terminals
Used as common ground terminal.

8. RS422/RS232C connectors
Connectors for connecting PTZ cameras to operate pan, tilt, and zoom functions of the camera.

9. RS485 connector
Connector for controlling this unit remotely.

10. RS-232C connector
Used to connect to a host device equipped with RS-232C connector (such as a personal computer). This unit can be controlled from other devices via this connector.

11. VIDEO OUTPUT connectors

OUTPUT A VIDEO connector
Output connector which sends video signal to the monitor (BNC connector).

OUTPUT A S(Y/C) connector
Output connector which sends brightness signals and colour signals separately for higher picture quality. Simultaneous output along with OUTPUT A VIDEO connector is also possible.

OUTPUT B VIDEO connector
Output connector which sends video signal to second (B) monitor (BNC connector) (☞ page 18).

12. SERIAL BUS port
Input and output port for connecting to the device equipped with SERIAL BUS connector. Do not use the power control function of the external device which uses bus power of this unit. Bus power cannot be used.
The various external HDDs can be connected to this unit in order to expand the memory or to use as the copy device. However, during recording or playing back a picture at high rate, some pictures may be missed due to the slow rate of data transfer or the slow speed of response from the external device connected. Be sure to check the operation sufficiently in advance.

13. RESET button
Used to reset the unit and turn off the power. At that time, picture data, menu settings, and the present time are kept.

14. LAN port
Port for communication using web browser.

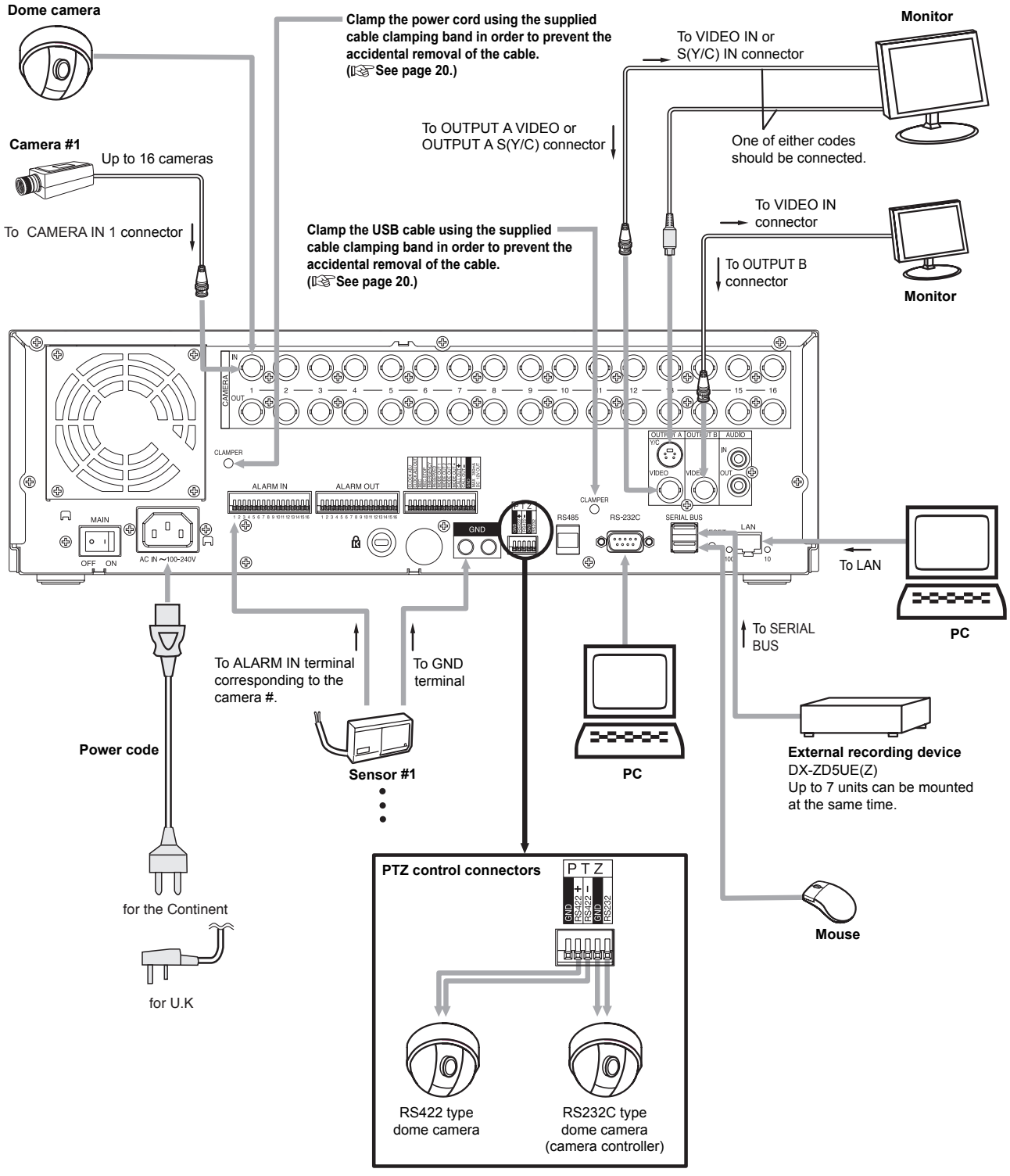
15. AUDIO connectors

AUDIO IN connector
Input connector for audio signal (RCA pin).

AUDIO OUT connector
Output connector for audio signal (RCA pin).

Connections

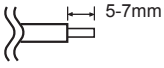
■ Connecting to CCTV camera, monitor, and sensor



Processing the connecting line

Connection on the ALARM IN terminals, the I/O terminals, and RS485/RS422
Compatible power lines ø0.32 - ø0.65 mm (AWG 28 - 22)

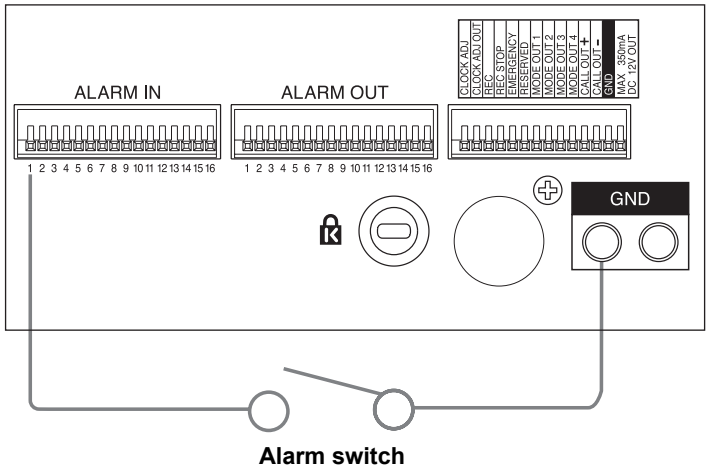
Cut the designated area from the electric wire's outer covering (vinyl portion).



❗ You can connect various devices to control this unit from them, or to control them from this unit. However, depending on the operational condition of this unit, the operational speed of this unit may become slower or control of the external device may be delayed.

■ Alarm recording connection

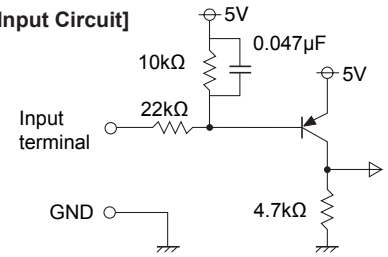
The diagram below shows an example connection for setting alarm signal to sensor number 1.



Alarm switch

EMERGENCY/ALARM IN/REC/CLOCK ADJ input terminals

[Input Circuit]

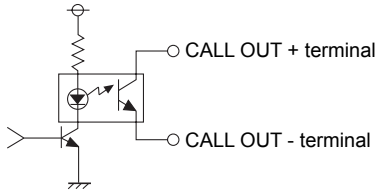


<Interface circuit inside of the unit>

[Input condition] ground of 200 ms or more
[Input interval] 1 second or more
[Specification] Active: When terminals are short-circuited or “Low” Level is applied.
Non active: Open.

CALL OUT output terminal

[Output Circuit]

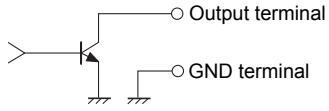


<Interface circuit inside of the unit>

[Specification] Warning signal (Photo coupler output)
Active: Short Max. Drive current 7 mA DC.
Non active: Open. Max. Voltage +24 V DC.

ALARM OUT/MODE OUT 1 to 4/CLOCK ADJ output terminals

[Output Circuit]

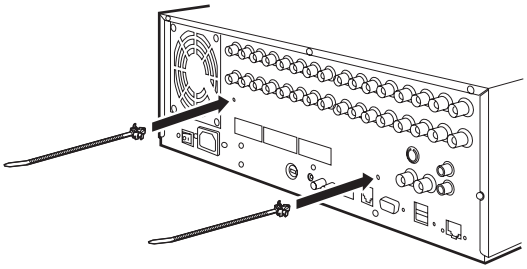


<Interface circuit inside of the unit>

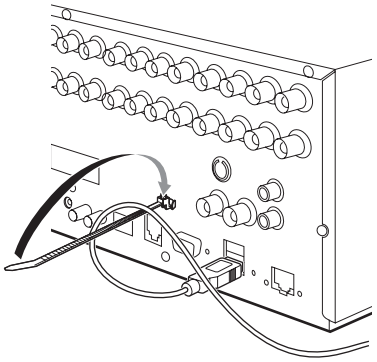
[Specification] Active: “Low” Level Max. Drive current 30 mA DC.
Non active: Open. Max. Voltage +24 V DC.
* Be sure to use these terminals within above rated value.

Clamping the cables

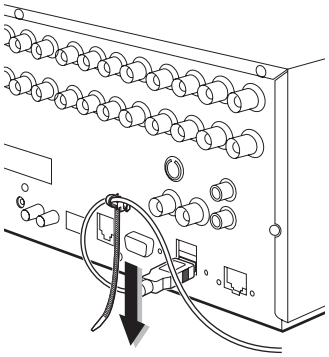
step**1.** Put the supplied cable clamping band into the clamper hole on the rear panel.
- There are 2 clamper holes on the unit, for power cable and USB cable.



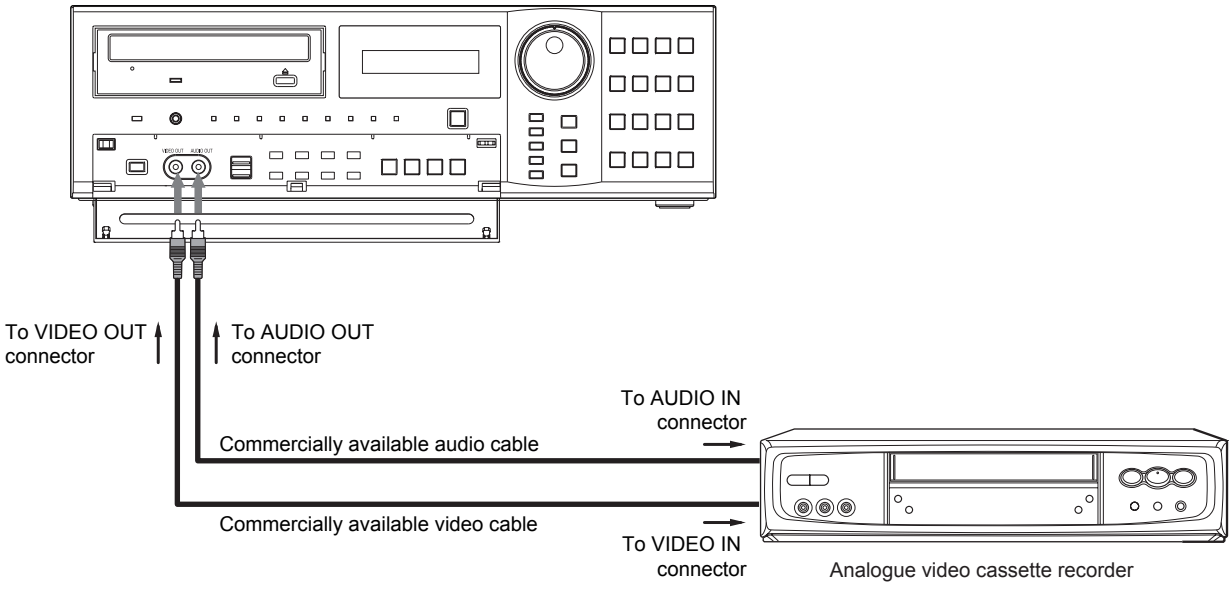
step**2.** Put the cable to be clamped through the cable clamping band as illustrated below.
- Face the serrated surface of the band inside.



step**3.** Pull the edge of the cable clamping band until it stops.



Connecting to an analogue video cassette recorder


To VIDEO OUT connector
To AUDIO OUT connector
To AUDIO IN connector
Commercially available audio cable
Commercially available video cable
To VIDEO IN connector
Analogue video cassette recorder

■ Optional items

DX-ZD5UE(Z)
HDD extension unit (serial bus connection type)

The various external HDDs can be connected to this unit in order to expand the memory or to use as the copy device. However, during recording or playing back a picture at high rate, some pictures may be missed due to the slow rate of data transfer or the slow speed of response from the external device connected. Be sure to check the operation sufficiently in advance.

Do not use the power control function of the external device which uses bus power of this unit.

DX-RM5(ZD)
Rack mount adapter for HDD extension unit DX-ZD5UE(Z).

DX-KB5UE
Keyboard for digital recorder

R-2500
Wired remote controller
(Menu setting, search, and PTZ preset function are not available with wired remote controller.)
Consult your dealer for the functions related to PTZ.

DX-RM4
Rack mount adapter for digital recorder DX-TL4516 series.

■ Recommended items

Consult your dealer about the recommended external devices.

The external device to be used may be unsuitable for the operation you want to set. It is recommended to consult your dealer when using the external device.

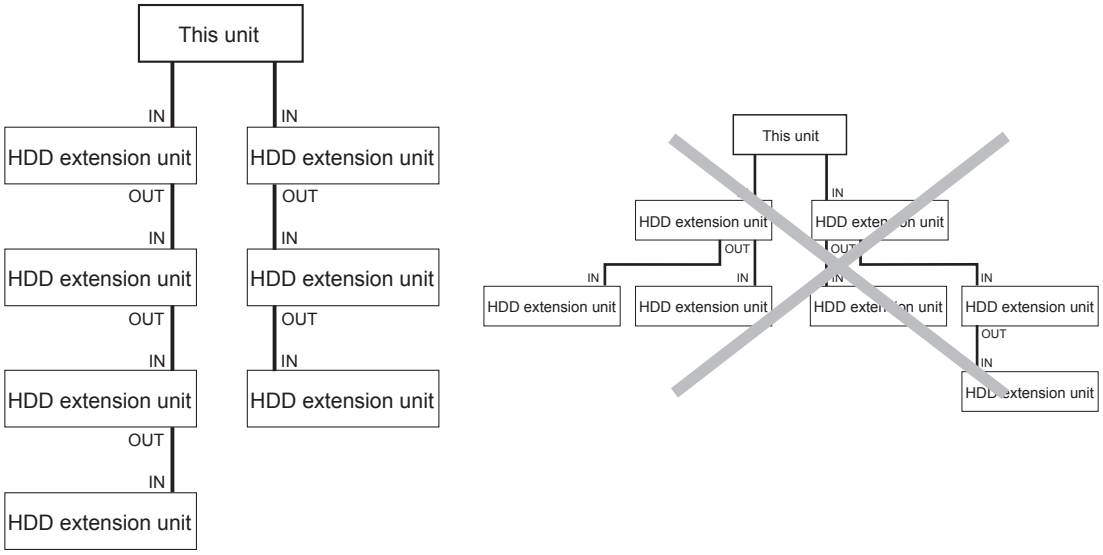
The various external HDDs can be connected to this unit in order to expand the memory or to use as the copy device. However, during recording or playing back a picture at high rate, some pictures may be missed due to the slow rate of data transfer or the slow speed of response from the external device connected. Be sure to check the operation sufficiently in advance.

■ Precaution concerning connection with HDD extension unit

When connecting 5 or more Mitsubishi HDD extension units (with 2 HDDs mounted for each unit) to this unit, you are recommended to use USB cable as illustrated below to prevent recognition error of this unit due to different start-up times among HDDs.

The available number of HDD extension units to be connected varies depending on the number of HDDs mounted for this unit.

Furthermore, before starting operation, check that the HDDs are recognized correctly even when a small number of HDD extension units are connected.



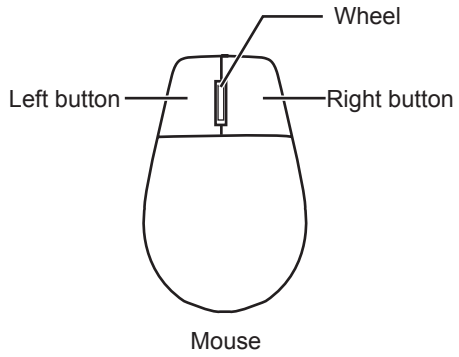
How to set the menus

■ Setting the menus

The operations of this unit can be set via a menu displayed on OUTPUT A monitor. You can select and set the menu by using the buttons on the front panel or using a USB mouse connected to the unit. When using the front panel buttons, the numbers 1-16 (camera number buttons) and letters A to E (SPLIT screen buttons) represent the GUI button of the menu screen.

❗ The menu can only be displayed through OUTPUT A monitor. The menu cannot be displayed through OUTPUT B monitor.

◆ Setting the menu using a mouse



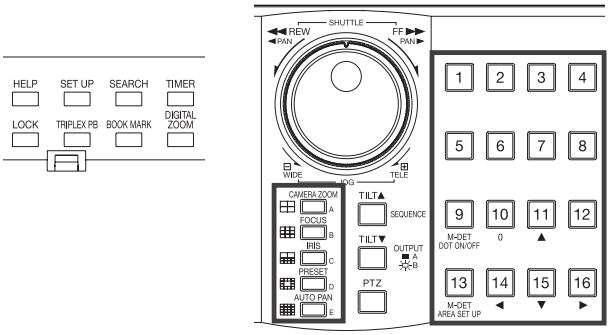
❗ Mouse is not supplied with this unit.

Use the standard USB mouse which has left and right buttons as illustrated to the left. Note that you cannot use the mouse with this unit depending on the mouse connected.

step1. Use the left and right mouse buttons to set the menu.

- Click the left button to open the menu or select a needed item, etc.
- Click the right button to set the active area for motion detection function. (☞ page 56)
- The wheel on a mouse does not work with this unit.

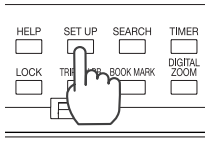
◆ Setting the menu using the front panel buttons

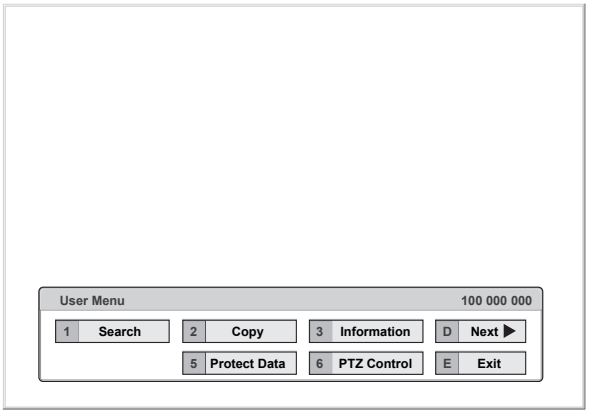


step1. Use the SET UP button, camera number buttons, and the SPLIT screen buttons (A to E) to set the menu.

- Press the SET UP button to display the menu screen.
- Press the camera number buttons (1 to 16) and the SPLIT screen buttons (A to E) to open each menu or to select the needed item.

◆ Displaying a menu screen

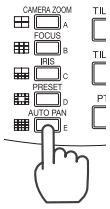


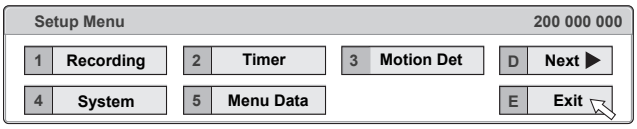


step1. Press the SET UP button or click the left button on the mouse to display a menu.
- The <User Menu> appears.
- To open other menu, press the D button or left-click on “Next ▶.”

When you use a mouse, click the following area to operate.

◆ Closing a menu screen

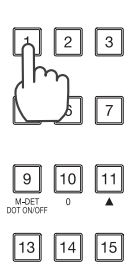


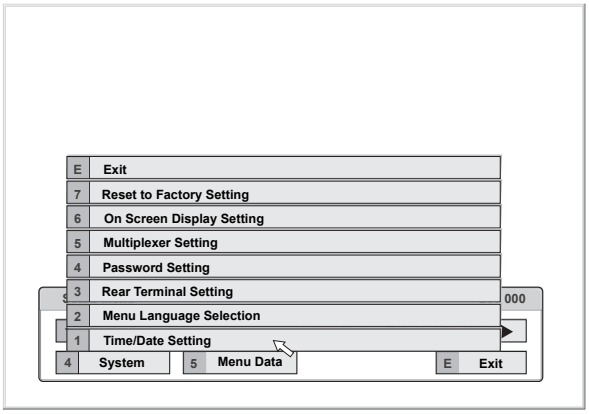


step1. Press the E button or left-click on the “Exit” to close the menu.

You cannot close the menu by pressing the SET UP button on the unit.

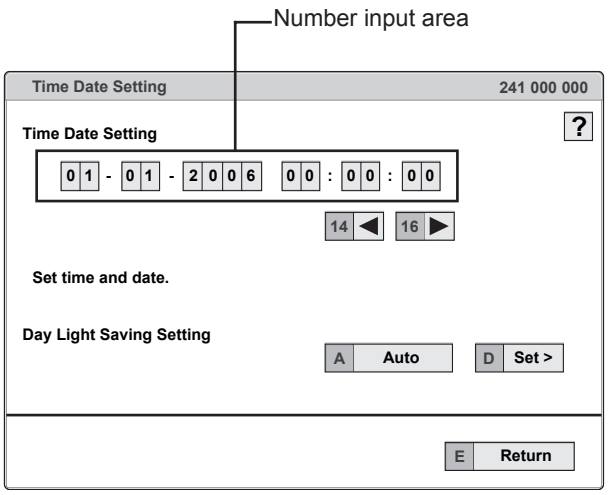
◆ Selecting an item





step1. Press the front panel button of the needed item number or left click on the needed item.
- The selected item menu opens.
- Select an item and press the number, or click on the menu to open the item.

♦ Inputting numbers



Using the front buttons of the unit:

step**1.** Press the camera number buttons (0 to 9) to input and use that number.
- The number displayed in red can be changed.

step**2.** To move to the next input area, press the 16 button.

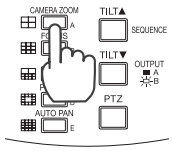
To go back to the previous area, press the 14 button.

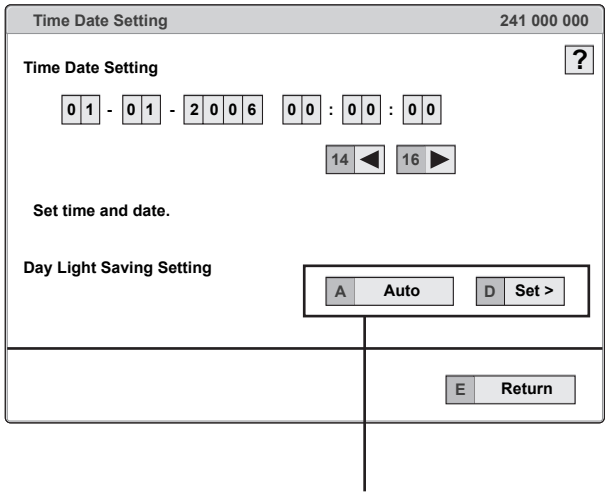
Using a mouse:

step**1.** Left-click on the number in red until the needed number appears.

To change another area, left-click on the needed area or left-click ◀ or ▶.

♦ Setting parameters



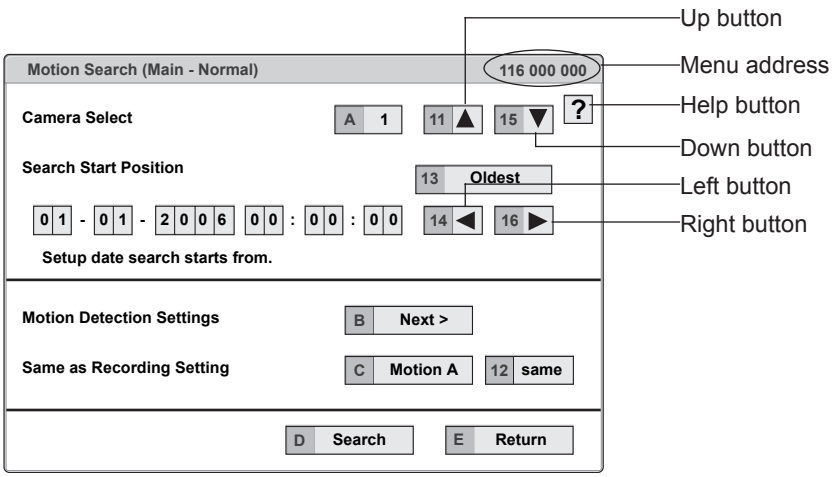


step**1.** Press the A button or left-click on the parameter box until the item to be set appears.
- For some items, more detailed setting is required. In this case, an item such as “D(Set >)” is displayed. If necessary, press the D button or left-click on the “Set >” to set more details.

❗ When you close the menu, press the E button or left click on “Return” or “Exit.”

❗ You cannot close the menu by pressing the SET UP button on the unit.

■ Symbols in the menus



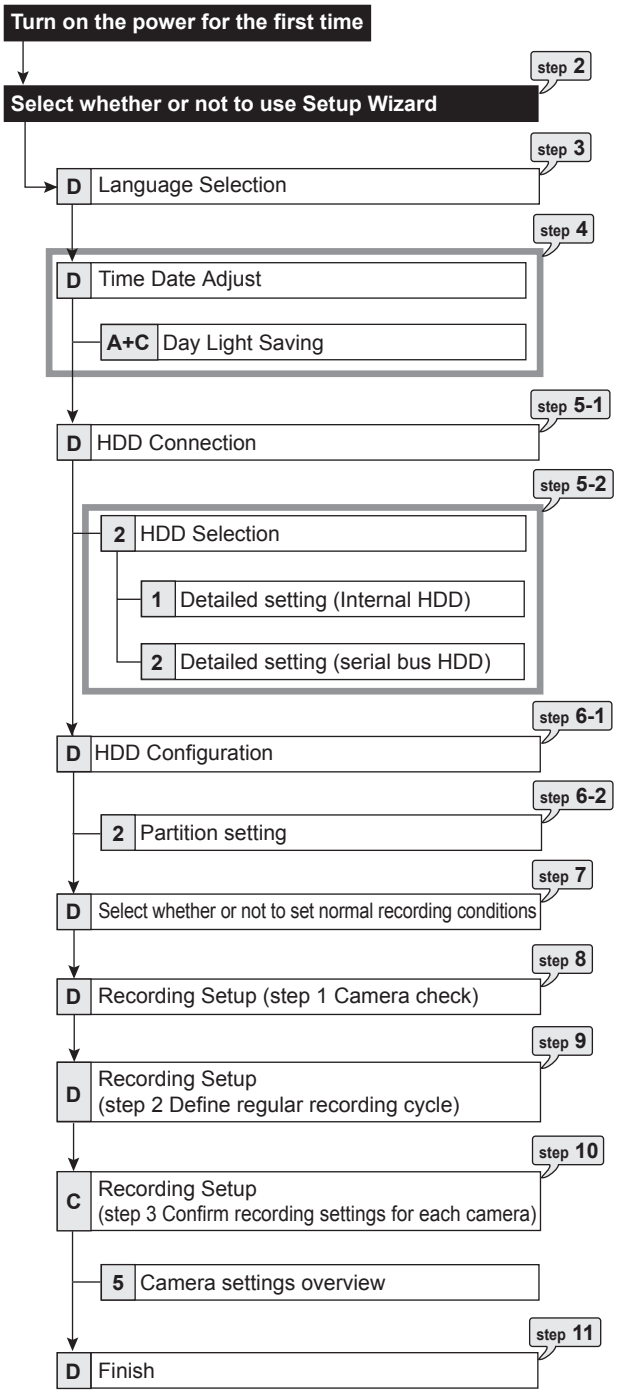
Some symbols appear in the menu screens. The meanings are as follows.

?	(Help)	When you press the HELP button or click this symbol, the detailed information on the menu appears.
◀	(Left)	When you press the 14 button or click this symbol, the item to be set shifts to left.
▶	(Right)	When you press the 16 button or click this symbol, the item to be set shifts to right.
▲	(Up)	When you press the 11 button or click this symbol, the value of selected item increases.
▼	(Down)	When you press the 15 button or click this symbol, the value of selected item decreases.
Menu address		A unique number for each menu page. You can go directly to each menu page by inputting the menu address number using the front buttons of the unit. For example, when opening the <Motion Search> menu, press the SET UP button and then press the camera number button in the order of 1, 6.

■ Setup Wizard

The setup wizard is displayed when the unit is turned on for the first time. The Wizard enables a quick setup.

Only when the unit is turned on for the first time, the setup wizard screen is displayed automatically. It is not displayed next time the unit is turned on.



step1. After connecting the cameras and the monitors, turn on the MAIN switch on the rear panel and wait until the ACCESS indicator is turned off, then press the POWER button on the front panel.
- The <Setup Wizard> screen appears.

The POWER button does not operate while the ACCESS indicator is flashing. Press the POWER button after the indicator is turned off and “POWER OFF” is displayed on the LCD display on the front panel.

step2. Select whether or not to use the setup wizard.
- Select “Go” when you want to use the setup wizard. If not, select “Quit.” When selecting “Quit,” the clock starts running from the initial setting.

Beware that the menu screen cannot be exited while setting the setup wizard. Furthermore some menu screens which have already been set are not displayed again.

step3. (When selecting “Go”)
Select the desired language.
- The <Language Selection> screen appears. The language of the menu can be selected in this screen.
- Select the desired language and then select “Execute” when you have changed the setting. The unit restarts when selecting “Execute.”
- Select “Next” when the language setting does not have to be changed.

step4. Set the present time and daylight saving setting. (☞ page 58)
- Select “Next” when the setting is completed.

The clock start running when exiting this screen.

step5-1. Set the connected HDD.
- When you use only the internal HDD, select “Internal” and then select “Next.”
- When you use the external HDDs, select “Int + Ext” and then select “Setting” to set the detailed setting for each HDD.

step5-2. (When selecting “Setting”)
Make the detailed setting for internal and serial bus HDDs.
- In the detailed setting screen, select “Main” and “Copy2” to use the selected HDD as the main device and copy 2 device respectively. Select “Free” when the selected HDD is not used as the main or the copy 2 device.
- When the setting is completed, return to the screen of step 5-1 and then select “Next.”

step6-1. Set the HDD configuration.
Normal: Does not set partition.
Partition: Sets an independent partition for alarm recording within the total HDD memory. When selecting “Partition,” set the partition capacity.
- Select “Next” when selecting “Normal.”
- Select “Setting” to set the partition capacity when selecting “Partition.”

step**6-2.** (When selecting “Partition”)
Set the desired partition capacity.
Normal Recording Area: The area for normal recording.
Alarm Recording Area: The area for alarm recording.
Long Pre-Alarm Area: The area for long pre-alarm recording.
- Set the partition capacity for each area in 5 % unit.
- You cannot set “Normal Recording Area” to “0 %.”
- When the setting is completed, return to the screen of step 6-1 and then select “Next.”

step**7.** Select whether or not to make the recording settings.
- To set the recording settings, select “Next.”
- Select “Quit” to exit the setup wizard without setting the recording settings. The power of the unit turns on.

In the recording setting screens, you can return to the previous screen by pressing the “Return” button.

step**8.** (When selecting “Next”)
By selecting “Execute,” the unit automatically checks the condition of the picture supplied from the camera and then sets the camera number to be recorded.
- Select “Next” when the setting is completed.

step**9.** Set the recording time.
- Set the recording cycle and the recording hour per day.
- Select “Execute” when the setting is completed.

step**10.** Frame/field, recording rate, and the picture grade for the camera numbers detected on step 8 are automatically set.
- The settings made here are used for normal recording.
- You can adjust the settings manually.
- Select “View” to confirm the settings. Select “Next” when the setting is completed.

The audio recording is set to “Off.” To record audio, refer to ☞ page 53.

When recording audio, the continuous recording time becomes shorter than the time when recording only picture. Check the estimated recording time on the preview screen of the normal recording.

step**11.** Select “Finish” to exit setup wizard.
- The unit boots-up.

Menu chart

■ Menu chart

You can set the basic settings for this unit in the menu settings.

❗ Some of the menu settings cannot be changed during playback, recording, or stand-by mode for pre-alarm recording.

◆ User Menu

User Menu (100 000 000)

	Menu	Menu Address	Functions	Pages
1 Search	1 Select Source Device	111 000 000	Selects the device to be played back/searched.	39
	2 Search by Time and Date	112 000 000	Searches the desired picture by specifying the time and date.	93
	3 Search by Alarm List	113 000 000	Searches the desired picture from the alarm list registered at the start of alarm recording.	94
	└ D Alarm List	113 D00 000	Displays the list of alarm recording.	94
	4 Find data storage location	114 000 000	Detects the device which is used to record by inputting the recording period.	39
	└ D Search (Device Search List)	114 D00 000	Displays the list of devices used to record for the specified time period.	39
	5 Search by Book Mark	115 000 000	Searches the desired picture by specifying a bookmark registered.	39
	6 Search by Motion	116 000 000	Searches camera picture with motions by using motion detection function during playback.	40
	└ B Next > (Motion Detection Settings)	116 B00 000	Sets the condition for motion detection.	40
	└ A + D Go	————	Sets the motion detection area manually.	40
	E Exit		Exits the Search menu.	-
2 Copy	1 Copy Data to Copy 1 Drive	121 000 000	Copies the data to copy 1 device by specifying the start and end points of the data. (for short period)	41
	└ 1 Start/End + 2 Set >	121 2SE 000	Specifies the start and end points to be copied.	41
	└ 1 Start + 2 Set >	121 2S0 000	Specifies only the start point of copy.	41
	└ 1 End + 2 Set >	121 2E0 000	Specifies only the end point of copy.	41
	2 Copy Data to Copy 2 Drive	122 000 000	Copies the data to copy 2 device by specifying only the start point of the data. (for long term)	42
	└ 1 Start + 2 Set >	122 2S0 000	Specifies the start point of copy.	42
	3 Set Copy 1 Drive	123 000 000	Specifies the condition for copying the recorded picture to copy 1 device.	41
	4 Set Copy 2 Drive	124 000 000	Specifies the condition for copying the recorded picture to copy 2 device.	42
	E Exit		Exits the Copy menu.	-

User Menu (100 000 000)

	Menu	Menu Address	Functions	Pages
3 Information	1 Main Storage Memory Information	131 000 000	Shows the recorded range of each area in the main device.	46
	2 Copy 1 Drive Information	132 000 000	Shows the recorded range of each group in copy 1 device.	46
	3 Copy 2 Drive Information	133 000 000	Shows the recorded range of each group in copy 2 device.	46
	E Exit		Exits the Information menu.	-
D Next			Proceeds to Setup Menu.	-
5 Protect Data	1 Protect Recorded Data	151 000 000	Protects the recorded pictures. Up to 500 areas can be protected and cannot be overwritten.	47
	2 Protected Data Information	152 000 000	Shows and searches the list of protected pictures.	47
	3 Change Protected Data Settings	153 000 000	Shows and deletes the list of protected pictures.	47
	E Exit		Exits the Protect Data menu.	-
6 PTZ Control	1 Go to PTZ Control	———	Activates pan or tilt of the PTZ camera connected.	48
	Zoom, iris, focus adjustment, AutoPan	———	Adjusts the zoom, iris, and focus of the camera. Activates auto pan.	48
	Preset	———	Presets up to 16 viewing positions.	48
	2 Select PTZ Camera	162 000 000	Switches the PTZ camera to be controlled.	48
	E Exit		Exits the PTZ Control menu.	-
E Exit			Exits the User Menu.	-

◆ Setup Menu

Setup Menu (200 000 000)

1 Recording

Menu	Menu Address	Functions	Pages
1 Set Recording Pattern A (Normal/Timer)	211 000 000	Specifies the recording setting for recording pattern A.	49-51,110,111
1 Camera Check	211 100 000	Selects the camera number to be recorded.	49-51
2 Auto + D Set >	211 2AD 000	Sets the normal recording setting automatically by specifying the recording cycle and the recording hour a day.	49-51, 110
D Execute	211 2AD D00	Shows the preview of the normal recording settings.	49-51
2 Easy + D Set >	211 2ED 000	Specifies frame or field, recording rate, and picture grade of normal recording to the same settings for all the camera numbers.	49-51, 110
D Execute	211 2ED D00	Shows the preview of the normal recording settings.	49-51
2 Manual + D Set >	211 2MD 000	Specifies frame or field, recording rate, and picture grade of normal recording for each camera number individually.	49-51, 110
D View >	211 2MD D00	Shows the preview of the normal recording settings.	49-51
3 Alarm Recording Menu	211 300 000	Specifies the alarm recording settings.	49-51,110,111
1 Easy + D Set >	211 3ED 000	Specifies frame or field, recording rate, and picture grade of alarm recording to the same settings for all the camera numbers.	49-51, 110
D Execute	211 3ED D00	Shows the preview of the alarm recording settings.	49-51
1 Manual + D Set >	211 3MD 000	Specifies frame or field, recording rate, and picture grade of alarm recording for each camera number individually.	49-51, 110
D View >	211 3MD D00	Shows the preview of the alarm recording settings.	49-51
4 Alarm Camera Setting	211 400 000	Specifies the sensor settings for alarm recording.	49-51, 111
D View >	211 4D0 000	Shows the recording camera for each sensor.	49-51
D Next >	211 4DD 000	Shows the recording camera for each sensor.	49-51
5 Alarm Trigger In/Out	211 500 000	Specifies the trigger and PTZ camera preset settings for alarm recording.	49-51, 111
D View >	211 5D0 000	Shows the preview of the trigger and PTZ camera preset settings for alarm recording.	49-51

Setup Menu (200 000 000)

	Menu	Menu Address	Functions	Pages
1 Recording	2 Set Recording Pattern B (Timer)	212 000 000	Specifies the recording setting for recording pattern B.	49-51,112,113
	1 Camera Check	212 100 000	Selects the camera number to be recorded.	49-51
	2 Auto + D Set >	212 2AD 000	Sets the normal recording setting automatically by specifying the recording cycle and the recording hour a day.	49-51, 112
	D Execute	212 2AD D00	Shows the preview of the normal recording settings.	49-51
	2 Easy + D Set >	212 2ED 000	Specifies frame or field, recording rate, and picture grade of normal recording to the same settings for all the camera numbers.	49-51, 112
	D Execute	212 2ED D00	Shows the preview of the normal recording settings.	49-51
	2 Manual + D Set >	212 2MD 000	Specifies frame or field, recording rate, and picture grade of normal recording for each camera number individually.	49-51, 112
	D View >	212 2MD D00	Shows the preview of the normal recording settings.	49-51
	3 Alarm Recording Menu	212 300 000	Specifies the alarm recording settings.	49-51,112,113
	1 Easy + D Set >	212 3ED 000	Specifies frame or field, recording rate, and picture grade of alarm recording to the same settings for all the camera numbers.	49-51, 112
	D Execute	212 3ED D00	Shows the preview of the alarm recording settings.	49-51
	1 Manual + D Set >	212 3MD 000	Specifies frame or field, recording rate, and picture grade of alarm recording for each camera number individually.	49-51, 112
	D View >	212 3MD D00	Shows the preview of the alarm recording settings.	49-51
	4 Alarm Camera Setting	212 400 000	Specifies the sensor settings for alarm recording.	49-51, 113
	D View >	212 4D0 000	Shows the recording camera for each sensor.	49-51
	D Next >	212 4DD 000	Shows the recording camera for each sensor.	49-51
	5 Alarm Trigger In/Out	212 500 000	Specifies the trigger and PTZ camera preset settings for alarm recording.	49-51, 113
	D View >	212 5D0 000	Shows the preview of the trigger and PTZ camera preset settings for alarm recording.	49-51

◆ Setup Menu (continued)

Setup Menu (200 000 000)

1 Recording

Menu	Menu Address	Functions	Pages
3 Set Recording Pattern C (Timer)	213 000 000	Specifies the recording setting for recording pattern C.	49-51,114,115
1 Camera Check	213 100 000	Selects the camera number to be recorded.	49-51
2 Auto + D Set >	213 2AD 000	Sets the normal recording setting automatically by specifying the recording cycle and the recording hour a day.	49-51, 114
D Execute	213 2AD D00	Shows the preview of the normal recording settings.	49-51
2 Easy + D Set >	213 2ED 000	Specifies frame or field, recording rate, and picture grade of normal recording to the same settings for all the camera numbers.	49-51, 114
D Execute	213 2ED D00	Shows the preview of the normal recording settings.	49-51
2 Manual + D Set >	213 2MD 000	Specifies frame or field, recording rate, and picture grade of normal recording for each camera number individually.	49-51, 114
D View >	213 2MD D00	Shows the preview of the normal recording settings.	49-51
3 Alarm Recording Menu	213 300 000	Specifies the alarm recording settings.	49-51,114,115
1 Easy + D Set >	213 3ED 000	Specifies frame or field, recording rate, and picture grade of alarm recording to the same settings for all the camera numbers.	49-51, 114
D Execute	213 3ED D00	Shows the preview of the alarm recording settings.	49-51
1 Manual + D Set >	213 3MD 000	Specifies frame or field, recording rate, and picture grade of alarm recording for each camera number individually.	49-51, 114
D View >	213 3MD D00	Shows the preview of the alarm recording settings.	49-51
4 Alarm Camera Setting	213 400 000	Specifies the sensor settings for alarm recording.	49-51, 115
D View >	213 4D0 000	Shows the recording camera for each sensor.	49-51
D Next >	213 4DD 000	Shows the recording camera for each sensor.	49-51
5 Alarm Trigger In/Out	213 500 000	Specifies the trigger and PTZ camera preset settings for alarm recording.	49-51, 115
D View >	213 5D0 000	Shows the preview of the trigger and PTZ camera preset settings for alarm recording.	49-51

Setup Menu (200 000 000)

	Menu	Menu Address	Functions	Pages
1 Recording	4 Set Recording Pattern D (Timer)	214 000 000	Specifies the recording setting for recording pattern D.	49-51,116,117
	1 Camera Check	214 100 000	Selects the camera number to be recorded.	49-51
	2 Auto + D Set >	214 2AD 000	Sets the normal recording setting automatically by specifying the recording cycle and the recording hour a day.	49-51, 116
	D Execute	214 2AD D00	Shows the preview of the normal recording settings.	49-51
	2 Easy + D Set >	214 2ED 000	Specifies frame or field, recording rate, and picture grade of normal recording to the same settings for all the camera numbers.	49-51, 116
	D Execute	214 2ED D00	Shows the preview of the normal recording settings.	49-51
	2 Manual + D Set >	214 2MD 000	Specifies frame or field, recording rate, and picture grade of normal recording for each camera number individually.	49-51, 116
	D View >	214 2MD D00	Shows the preview of the normal recording settings.	49-51
	3 Alarm Recording Menu	214 300 000	Specifies the alarm recording settings.	49-51,116,117
	1 Easy + D Set >	214 3ED 000	Specifies frame or field, recording rate, and picture grade of alarm recording to the same settings for all the camera numbers.	49-51, 116
	D Execute	214 3ED D00	Shows the preview of the alarm recording settings.	49-51
	1 Manual + D Set >	214 3MD 000	Specifies frame or field, recording rate, and picture grade of alarm recording for each camera number individually.	49-51, 116
	D View >	214 3MD D00	Shows the preview of the alarm recording settings.	49-51
	4 Alarm Camera Setting	214 400 000	Specifies the sensor settings for alarm recording.	49-51, 117
	D View >	214 4D0 000	Shows the recording camera for each sensor.	49-51
	D Next >	214 4DD 000	Shows the recording camera for each sensor.	49-51
	5 Alarm Trigger In/Out	214 500 000	Specifies the trigger and PTZ camera preset settings for alarm recording.	49-51, 117
	D View >	214 5D0 000	Shows the preview of the trigger and PTZ camera preset settings for alarm recording.	49-51
	5 Emergency Recording Setup	215 000 000	Specifies recording time for long pre-alarm recording. Also specifies recording time, maximum recording rate, and camera for emergency recording.	52,53,118
	D Execute	215 D00 000	Shows the preview of the emergency recording settings.	52,53
	6 Audio Recording Setup	216 000 000	Specifies the audio recording setting.	53, 118
	E Exit		Exits the Recording menu.	-

◆ Setup Menu (continued)

Setup Menu (200 000 000)

	Menu	Menu Address	Functions	Pages
2 Timer	1 Program Selection and Program Overview	221 000 000	Specifies the program number of timer setting.	54,55
	2 Overview >	221 200 000	Shows the overview of Program 1.	54,55
	3 Overview >	221 300 000	Shows the overview of Program 2.	54,55
	2 Configure Timer Program 1	222 000 000	Specifies the settings of Program 1.	54,55,118
	3 Configure Timer Program 2	223 000 000	Specifies the settings of Program 2.	54,55,118
	4 Define Holidays	224 000 000	Specifies the holidays.	54,55,119
	E Exit		Exits the Timer menu.	-
3 Motion Det	1 Set Motion Detection Pattern A	231 000 000	Specifies the detecting condition of Motion A.	56,57,119
	A+12 Set >	———	Specifies the active area of the motion detection (Motion A).	56,57
	13 Go test >	———	Tests the operation of the motion detection (Motion A).	56,57
	2 Set Motion Detection Pattern B	232 000 000	Specifies the detecting condition of Motion B.	56,57,119
	A+12 Set >	———	Specifies the active area of the motion detection (Motion B).	56,57
	13 Go test >	———	Tests the operation of the motion detection (Motion B).	56,57
	E Exit		Exits the Motion Det menu.	-
D Next			Proceeds to System Menu.	-
4 System	1 Time/Date Setting	241 000 000	Adjusts time date setting and selects daylight saving setting.	58
	A Auto + D Set >	241 D00 000	Specifies the time period for daylight saving settings.	58
	2 Menu Language Selection	242 000 000	Selects menu language to be displayed.	58,119
	3 Rear Terminal Setting	243 000 000	Specifies the settings for MODE OUT terminal, CALL OUT terminal, key sound, and buzzer.	58,59,119,120
	1 Settings >	243 100 000	Specifies mode out settings and remain settings.	58,59,119
	2 Settings >	243 200 000	Specifies call out settings and remain settings.	58,59,120
	4 Password Setting	244 000 000	Registers the password.	60,61,120
	1 Setting >	244 100 000	Registers the password of level 1.	60,61,120
	2 Setting >	244 200 000	Registers the password of level 2.	60,61,120
	3 Setting >	244 300 000	Registers the password of level 3.	60,61,120
	4 Setting >	244 400 000	Registers the disk management password.	60,61,120

Setup Menu (200 000 000)

Menu	Menu Address	Functions	Pages
4 System			
5 Multiplexer Setting	245 000 000	Specifies the multiplex display settings for Output A and Output B.	64-66,120,121
1 Settings >	245 100 000	Specifies the output A display settings and switching time of the output A sequence settings.	64,120
1 Settings >	245 110 000	Specifies the output A split 4 display settings.	64,120
1 Settings >	245 111 000	Specifies the output A split 4a display settings.	64,120
2 Settings >	245 112 000	Specifies the output A split 4b display settings.	64,120
3 Settings >	245 113 000	Specifies the output A split 4c display settings.	64,120
4 Settings >	245 114 000	Specifies the output A split 4d display settings.	64,120
2 Settings >	245 120 000	Specifies the output A split 9 display settings.	64,120
1 Settings >	245 121 000	Specifies the output A split 9a display settings.	64,120
2 Settings >	245 122 000	Specifies the output A split 9b display settings.	64,120
3 Settings >	245 130 000	Specifies the output A split 10 display settings.	64,120
1 Settings >	245 131 000	Specifies the output A split 10a display settings.	64,120
2 Settings >	245 132 000	Specifies the output A split 10b display settings.	64,120
4 Settings >	245 140 000	Specifies the output A split 13 display settings.	64,120
1 Settings >	245 141 000	Specifies the output A split 13a display settings.	64,120
2 Settings >	245 142 000	Specifies the output A split 13b display settings.	64,120
5 Settings >	245 150 000	Specifies the output A split 16 display settings.	64,120
6 Settings >	245 160 000	Specifies the output A single sequence setting.	64,120
7 Settings >	245 170 000	Specifies the output A split sequence settings.	64,120
2 Settings >	245 200 000	Specifies the output B display settings and switching time of the output B sequence settings.	65,121
1 Settings >	245 210 000	Specifies the output B split 4 display settings.	65,121
1 Settings >	245 211 000	Specifies the output B split 4a display settings.	65,121
2 Settings >	245 212 000	Specifies the output B split 4b display settings.	65,121
3 Settings >	245 213 000	Specifies the output B split 4c display settings.	65,121
4 Settings >	245 214 000	Specifies the output B split 4d display settings.	65,121
2 Settings >	245 220 000	Specifies the output B split 9 display settings.	65,121
1 Settings >	245 221 000	Specifies the output B split 9a display settings.	65,121
2 Settings >	245 222 000	Specifies the output B split 9b display settings.	65,121
3 Settings >	245 230 000	Specifies the output B split 10 display settings.	65,121
1 Settings >	245 231 000	Specifies the output B split 10a display settings.	65,121
2 Settings >	245 232 000	Specifies the output B split 10b display settings.	65,121
4 Settings >	245 240 000	Specifies the output B split 13 display settings.	65,121
1 Settings >	245 241 000	Specifies the output B split 13a display settings.	65,121
2 Settings >	245 242 000	Specifies the output B split 13b display settings.	65,121

◆ Setup Menu (continued)

Setup Menu (200 000 000)

	Menu	Menu Address	Functions	Pages
4 System	5 Settings >	245 250 000	Specifies the output B split 16 display settings.	65,121
	6 Settings >	245 260 000	Specifies the output B single sequence setting.	65,121
	7 Settings >	245 270 000	Specifies the output B split sequence settings.	65,121
	4 Settings >	245 400 000	Specifies the alarm display setting.	66,121
	5 Settings >	245 500 000	Specifies the covert camera setting.	66,122
	6 On Screen Display Setting	246 000 000	Specifies the on screen display information settings.	67,68,122
	1 Settings >	246 100 000	Specifies the display location of clock, operational condition, and camera number.	67,122
	2 Settings >	246 200 000	Specifies the camera title.	67,122
	3 Overview >	246 300 000	Shows the preview screen of the camera titles.	67
	D Next >	246 3D0 000	Shows the preview screen of the camera titles.	67
	4 Settings >	246 400 000	Specifies the recorder title.	68,122
	5 Adjust >	246 500 000	Specifies the monitor output settings.	68,122
	7 Reset to Factory Setting	247 000 000	Resets the menu settings to the factory settings.	68
	E Exit		Exits the System menu.	-
5 Menu Data	1 Load Menu Data + D Execute	251 000 000	Loads the menu setting data from the external device.	69
	1 Select >	251 100 000	Selects the device from which the menu is loaded.	69
	2 Save Menu Data + D Execute	252 000 000	Saves the menu setting data of this unit to the external device.	69
	1 Select >	252 100 000	Selects the device to which the menu is saved.	69
	E Exit		Exits the Menu Data menu.	-
E Exit			Exits the Setup Menu.	-

System Menu

System Menu (300 000 000)

	Menu	Menu Address	Functions	Pages
1 COM/LAN	1 RS-232C Setting	311 000 000	Specifies RS-232C port settings.	70,123
	2 RS-485 Setting	312 000 000	Specifies RS-485 communication settings.	70,123
	3 LAN (Communication) Setting	313 000 000	Specifies the communication setting between this unit and the personal computer.	71,123
	1 Setting >	313 100 000	Specifies the detailed settings for LAN.	71,123
	2 Setting >	313 200 000	Specifies the service port settings.	71,123
	3 Information >	313 300 000	Shows e-mail addresses of alarm notification.	71
	D Detail >	313 3D0 000	Shows the detailed alarm notification settings.	71
	4 Information >	313 400 000	Shows the alarm notification settings.	71
	D Detail >	313 4D0 000	Shows the detailed alarm notification settings.	71
	E Exit		Exits the COM/LAN menu.	-
2 PTZ Setting	1 PTZ Camera Configuration	321 000 000	Specifies the setting of the camera to be controlled.	72,123
	2 Configuration Check List	322 000 000	Shows the settings you have set in the <PTZ Camera Configuration> screen.	72
	D Next >	322 D00 000	Shows the settings you have set in the <PTZ Camera Configuration> screen.	72
	E Exit		Exits the PTZ Setting menu.	-
3 Service Info	1 System Log List	331 000 000	Shows the number, date, and time of the system log.	73
	2 Elapsed Operating Time	332 000 000	Shows the total operating time.	73
	3 Disk Information	333 000 000	Shows the recorded range of each device.	73
	1 Information >	333 100 000	Shows the recorded range of the main device.	73
	D Detail >	333 1D0 000	Shows the detailed information of the main device.	73
	2 Information >	333 200 000	Shows the recorded range of the SerialBus group of the Copy 1 device.	73
	D Detail >	333 2D0 000	Shows the detailed information of the device.	73
	3 Information >	333 300 000	Shows the recorded range of the DVD/CD group of the Copy 1 device.	73
	D Detail >	333 3D0 000	Shows the detailed information of the device.	73
	4 Information >	333 400 000	Shows the recorded range of the USBmemory.	73
	D Detail >	333 4D0 000	Shows the detailed information of the device.	73
	5 Information >	333 500 000	Shows the recorded range of the SerialBus group of the Copy 2 device.	73
	D Detail >	333 5D0 000	Shows the detailed information of the device.	73
	6 Information >	333 600 000	Shows the recorded range of the DVD/CD group of the Copy 2 device.	73
	D Detail >	333 6D0 000	Shows the detailed information of the device.	73
	7 Information >	333 700 000	Shows the recorded range of the internal HDD group of the Copy 2 device.	73
	D Detail >	333 7D0 000	Shows the detailed information of the device.	73
	E Exit		Exits the Service Info menu.	-

◆ System Menu (continued)

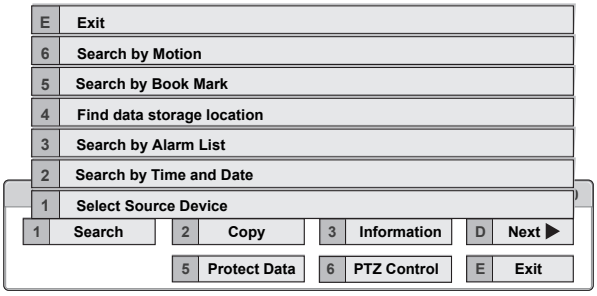
System Menu (300 000 000)

	Menu	Menu Address	Functions	Pages
D Next			Proceeds to User Menu.	-
4 Restore	1 Restore Data to Main HDD from Drive1/2	341 000 000	Restores the data from the copy device.	74
	1 Start/End + 2 Set >	341 2SE 000	Specifies the start and end points to be restored.	74
	1 Start + 2 Set >	341 2S0 000	Specifies only the start point of restoring.	74
	2 Export Drive 1/2 Configuration	342 000 000	Specifies the condition for restoring the data to the main device from the copy device.	74
	E Exit		Exits the Restore menu.	-
5 Memory	1 Add/Remove HDD Device	351 000 000	Registers or removes the device used as the main or copy device.	75,124
	1 Settings >	351 100 000	Registers or removes the internal HDD for main or copy 2 device.	75,124
	2 Settings >	351 200 000	Registers or removes the serial bus device for main or copy device.	75,124
	2 Add/Remove DVD/CD Drive	352 000 000	Registers or removes the DVD/CD drive for copy 1 or 2 device.	76,124
	3 Data Management Setting for Main Memory	353 000 000	Specifies the repeat recording settings.	77,125
	4 Settings >	353 400 000	Specifies the partition setting of the main device.	77,125
	4 Recording Data Readout Setting	354 000 000	Specifies repeat playback, image originality check playback, and auto-expire on specified date.	78,125
	E Exit		Exits the Memory menu.	-
6 Data Clear	1 Main Storage Memory + D Execute	361 000 000	Deletes the data of the Main device.	79
	2 Copy 1 + D Execute	362 000 000	Deletes the data of the copy 1 device.	79
	3 Copy 2 + D Execute	363 000 000	Deletes the data of the copy 2 device.	79
	E Exit		Exits the Data Clear menu.	-
E Exit			Exits the System Menu.	-

Selecting the search function

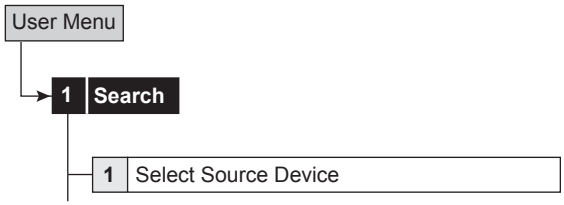
The various search functions of this unit can be used to go to the beginning of the desired picture. This unit is equipped with 5 search functions.

When the SEARCH button on the front panel is pressed, the <User Menu> with search menu opened is displayed.



Select Source Device

This item is used to set the playback or search device.



step**1.** Set the desired playback device and playback area.
Main: Plays back or searches recording contents of the main device.
Normal: Normal recording area
Alarm: Alarm recording area
LPA: Long pre-alarm recording area
Copy 1: Plays back or searches the recording contents of the copy 1 device.
"SerialBus," "DVD/CD," "USBmemory"
Copy 2: Plays back or searches the recording contents of the copy 2 device.
"Internal," "SerialBus," "DVD/CD"

- "Alarm" appears when "Alarm Recording Area" (☞ page 77 "Change Partition Setting") is set to other than "0 %."
- "LPA" appears when "Long Pre-Alarm Area" (☞ page 77 "Change Partition Setting") is set to other than "0 %."
- When ejecting the disc, make sure to use the "Media Eject" on the menu screen.

Search by Time and Date

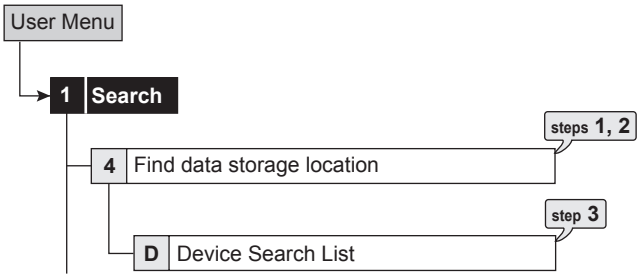
☞ page 93

Search by Alarm List

☞ page 94

Find data storage location

This item is used to display the list of the devices used for recording in the specified time period and to specify the device.



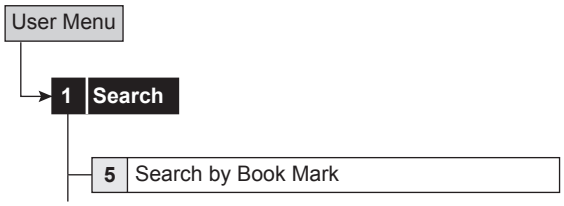
step**1.** Input the recording range to be searched in "From" and "To."

step**2.** Select "Search."
- The list of the devices containing data of the specified period is displayed.
- To search for the other device, select the desired device in the <Select Source Device>.

step**3.** In the <Device Search List>, select "Check" of the device search list number to be checked.
- When you select "Check," you can access to the device.

Search by Book Mark

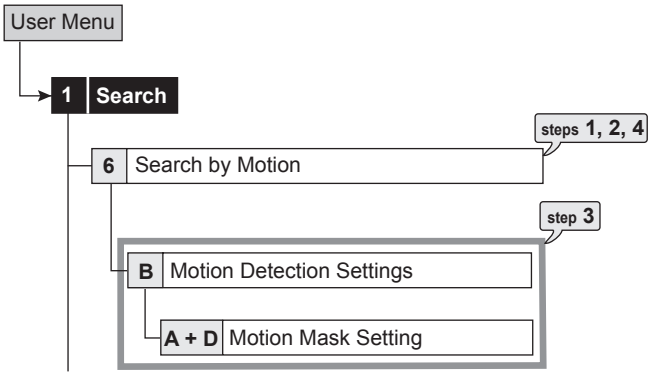
This item is used to search for the preset bookmarks.



step**1.** In the <Search by Book Mark>, select the bookmark list number you want to display.
- The picture of the selected bookmark is displayed in frame still playback of the single screen display.
- ☞ See page 82 for registering a bookmark.

■ Search by Motion

By specifying the motion detection conditions for playback, you can search the picture with the motion which meets the specified condition. For this function, the camera number and start time need to be specified to search. The search result is displayed in frame still playback of the single screen display.



step1. Set the camera number to be searched.

step2. Set the time for start searching.
- To search from the oldest recording point, select “Oldest.”
- When the search start point is set to the earlier time than the recording start point, the search is executed from the oldest recording point.

step3. Set the motion detection conditions for playback.
- Set motion mask setting, sensitivity, and motion threshold. ☞ See page 56 for the details of these settings.
- The sensitivity of motion detection conditions for playback has two setting items, “Low” and “High.”
- The motion detection settings for recording (Motion A or B) can be copied. To copy the settings for recording, display the desired setting in “Same as Recording Setting” and then select “same.”
  The sensitivity setting for playback is set to “High” when the setting for recording of “High,” “Mid High,” or “Mid” is copied, and is set to “Low” when the setting for recording of “Mid Low” or “Low” is copied.

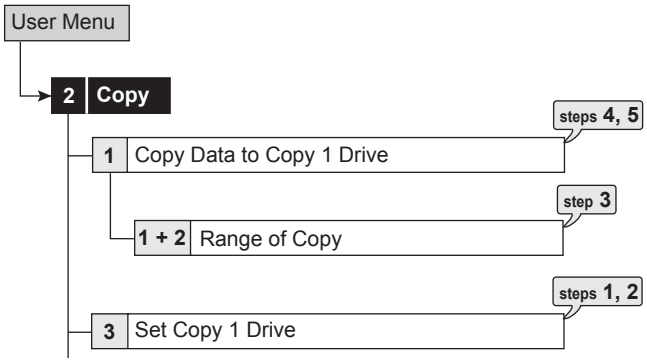
step4. Select “Search.”

This item is used to copy the data from the main device to a copy device.

■ Copy Data to Copy 1 Drive/Set Copy 1 Drive

This item is used to copy the data to Copy 1 device by specifying the start and end points. The points are specified by the date and time or the bookmark. This function is useful for copying the data of the short period of time.

- Before executing the copy, make sure that the Copy 1 device is connected and set in the <Add/Remove HDD Device> and <Add/Remove DVD/CD Drive> (☞ pages 75 and 76) correctly.



step1. Set the camera number to be copied.
- The button function changes between “All Off” and “All On” each time you select this button. You can switch on and off for all the cameras easily by using this button.
- The picture is not copied when there is no recorded picture of the set camera number or time. Make sure to check that the picture of the specified camera has been recorded on the specified copy start point.

step2. Select “Other settings” and then set the detailed settings.
From Device: Sets the device which contains the data to be copied. The available setting items are “Main” and “Copy 2.”
From Group: Sets the group which contains the data to be copied. The available setting items are “Normal,” “Alarm,” and “LPA” for main, “SerialBus,” “DVD/CD,” and “Internal” for copy 2.
To Copy 1: Sets the group to where the data is copied. The available setting items are “SerialBus,” “DVD/CD,” and “USBmemory.”
Copy Data: Sets the data area to be copied. The available setting items are “Alarm” and “All.”
Overwrite: Selects whether or not to overwrite the existed data.
Auto Eject: Selects whether to eject media (CD/DVD) automatically when the copy is over.

- “Alarm” appears for “From Group” when “Alarm Recording Area” (☞ page 77 “Change Partition Setting”) is set to other than “0 %.”
- “LPA” appears for “From Group” when “Long Pre-Alarm Area” (☞ page 77 “Change Partition Setting”) is set to other than “0 %.”
- When copying the data to DVD while “Overwrite” is set to “On,” the unit clears the existing data on the disc before overwriting with new data. Note that clearing the data takes about 30 to 40 minutes. You cannot cancel operation during clearing the data of the DVD.
- When copying the data while “Copy Data” is set to “Alarm,” the unit performs copy operation, however, the data is not copied if there is no alarm recording data within the specified range of copy. In case of CD/DVD disc, the remaining capacity becomes low because only the management information is recorded. It is recommended to carry out “Calculate” in <Copy Data to Copy 1 Drive> to confirm whether or not there is alarm recording data in the specified range.

step3. Set the start, start/end, or end point of copy by specifying the date and time or the bookmark number.
Start: Sets only the start point of copy. The data is copied from the specified start point as much data as possible with the remaining capacity of the media to be copied.
Start/End: Sets the start and end points of copy.
End: Sets only the end point of copy. The data is copied as much data as possible with the remaining capacity of the media to be copied until the specified end point reaches.
- To set the bookmark point, select “Bookmark” and then select the desired bookmark number.
- To copy from the oldest recording time, select “Copy Start Time.” To copy to the latest recording time, select “Copy End Time.”

step4. Select “Calculate” to calculate the capacity of data to be copied.

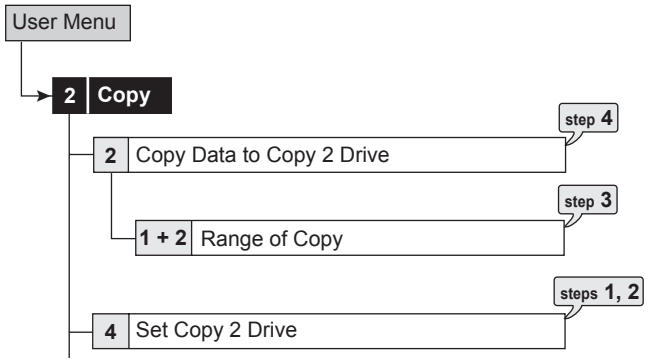
- When using “End,” the copy cannot be executed unless the calculation of the capacity of data to be copied is completed.
- When using “Start” or “Start/End” and executing copy without calculating the capacity of data to be copied, the progress or the time of the copy may not be displayed correctly because the unit cannot determine the capacity of data to be copied.

step5. Select “Execute.”
- The copy starts.
- To stop copy manually, select “Cancel” in the progress screen. The data which has been copied before cancelling is copied.

■ Copy Data to Copy 2 Drive/Set Copy 2 Drive

This item is used to copy the data to Copy 2 device by specifying only the start point. The point is specified by the date and time or the bookmark. The copy continues until the end point of the recording data reaches or the media to be copied becomes full unless the copy is stopped manually (when “FIFO Overwrite” is set to “Off”). This function is useful for making backup of the recording data.

- Before executing the copy, make sure that the Copy 2 device is connected and set in the <Add/Remove HDD Device> and <Add/Remove DVD/CD Drive> (☞ pages 75 and 76) correctly.



step1. Set the camera number to be copied.
- The button function changes between “All Off” and “All On” each time you select this button. You can switch on and off for all the cameras easily by using this button.
- The picture is not copied when there is no recorded picture of the set camera number or time.

step2. Select “Other settings” and then set the detailed settings.
From Main: Sets the area which contains the data to be copied. The available setting items are “Normal,” “Alarm,” and “LPA.”
To Copy 2: Sets the group to where the data is copied. The available setting items are “SerialBus,” “DVD/CD,” and “Internal.”
Copy Data: Sets the data area to be copied. The available setting items are “Alarm” and “All.”
Overwrite: Selects whether or not to overwrite the existed data.
Auto Eject: Selects whether to eject media (CD/DVD) automatically when the copy is over.
FIFO Overwrite: Selects whether to repeat copying from the start point of the media by overwriting the existed data, or to stop copying when the capacity of the media becomes full during copying. This setting is available only when the copy destination is HDD.

- “Alarm” appears for “From Main” when “Alarm Recording Area” (☞ page 77 “Change Partition Setting”) is set to other than “0 %.”
- “LPA” appears for “From Main” when “Long Pre-Alarm Area” (☞ page 77 “Change Partition Setting”) is set to other than “0 %.”
- When copying the data to DVD while “Overwrite” is set to “On,” the unit clears the existed data of the disc before overwriting with new data. Note that clearing the data takes about 30 to 40 minutes. You cannot cancel operation during clearing the data of the DVD.
- When copying the data while “Copy Data” is set to “Alarm,” the unit performs copy operation, however, the data is not copied if there is no alarm recording data within the specified range of copy. In case of CD/DVD disc, the remaining capacity becomes low because only the management information is recorded.
- Do not use the disc which has been used on the personal computer, failed to be copied, or stopped during copying due to the power failure because they may cause malfunction of the unit.

step3. Set the start time of copy.
Start: Sets the start point of copy.
Continue: Starts copying from the end point of the previous copy.
- To set the start point using the bookmark, select “Bookmark” and then select the desired bookmark number.
- To copy from the oldest recording time, select “Copy Start Time.”

step4. Select “Execute.”
- The copy starts.
- To stop copy manually, select “Cancel” in the screen of <Copy Data to Copy 2 Drive>. The data which has been copied before cancelling is copied.

- The warning is displayed when the copied range exceeds the available capacity of the device to be copied when “FIFO Overwrite” is set to “Off” and the copy destination is HDD. In this case, set the copy setting again with narrower copy range or use a copy device with larger capacity.
- When the copy is performed during recording, the picture of the recording start and end points may not be recorded.
- When the recording data of the main device which is being copied is about to be overwritten or has been overwritten, copy is stopped. Be careful for the copy which requires long time such as overwriting copy of DVD.
- The progress bar of copy is not displayed for copy 2.
- The picture data is processed in 2 MB unit. Therefore the data is copied in 2 MB unit from the start point of the designated range when copying.
- By using the picture copy function, the single screen picture being displayed can be copied. (☞ page 82)

■ Copying the data of this unit to a video cassette

This function is used to copy the data of this unit to a video cassette using an analogue video cassette recorder. Data can be copied even when the unit is in recording. For the recording operation, see the instruction manual for the analogue video cassette recorder used.

step**1.** [Analogue video cassette recorder] Prepare the VCR for recording.
- Set the input source of the VCR to the external input.

step**2.** [This unit] Display the picture in its format (single/split) that you want to record.

step**3.** [This unit] If needed, use the search function to display the start position of copy.

step**4.** [Analogue video cassette recorder] Start recording.

step**5.** [This unit] Press the PLAY button to start playback.

step**6.** To stop copying, press the STOP button on this unit first. And then, stop the recording on the analogue video cassette recorder.

❗ ☞ See page 20 for connecting to the analogue video cassette recorder.

❗ Only the picture displayed on the monitor screen can be copied to the video cassette.

■ Playback software

When copying the data to CD/DVD or USB memory, the needed PC playback software is automatically copied on to the disc. Refer to the following for using the software.

◆ System requirements

- OS: Microsoft Windows 2000 or Windows XP.
- CPU: IBM PC/AT compatible with an Intel Pentium series processor of at least 500 MHz.
- RAM: 256 MB or more.
- HDD: System drive with unused space of at least 200 MB.
- Display device: XGA (1024 pixels x 768 pixels) or higher.

◆ Starting up the application software

step1. Load the CD/DVD/USB memory to the personal computer which has been used for copy.

step2. Double-click the icon of the disc to open.

step3. Start up the application software.
- Double-click the “FSM Player Lite.exe.” The application software starts up and the operation panel appears.
  When the picture cannot be loaded, use the [Folder] command in the [File] menu to select the picture folder to be played back.

You can open the FSMPlayerLite panel in 4 stages by clicking on the right side. In the first stage, you can select playback, search and bookmark operations. In the second stage, you can select a camera to display. In the third stage, you can adjust playback speed (reducing only) and in the fourth stage, you can make various settings for audio playback.

◆ Operational panel

Rewind
Click to jump to the head of the recording data.

Reverse Search
Click to playback the picture in the reverse direction with a higher speed than normal playback. The speed changes from X1 to X2, X4, X8 and back to X1 at every press of this button during reverse playback.

Reverse Playback
Click to playback the picture in the reverse direction.

Field Reverse
Click to display a still picture one field before.

Stop
Click to stop playback. Audio, if recorded, is played back after the stop when the audio command has been enabled.

Field Advance
Click to display a still picture one field after.

Playback
Click to playback the picture in the forward direction.

Forward Search
Click to playback the picture in the forward direction with a higher speed than normal playback. The speed changes from X1 to X2, X4, X8 and back to X1 at every press of this button during playback.

1 to 16 Camera
(These buttons are displayed when the button located on the lower right of the Forward Search button is pressed.) Click to display the picture of the camera corresponding to the number of the button. The indicator turns green for the camera number which is being displayed, and it turns black for the camera number which is not being displayed. The picture is not displayed even when the indicator turns green if the data has not been copied for that camera number.

Refresh Speed
(This slider is displayed when the button located on the lower right of the Camera button is pressed.) Drag with the mouse to adjust the playback speed. When setting to [Fast], it may disrupt the operation depending on the performance of the personal computer used. Use this setting with the proper picture playback speed suitable to the personal computer used.
The playback speed slider may not be changed at a constant interval when the data which is additionally copied is played back.

Output
(This is displayed when the button located on the lower right of the Refresh Speed slider is pressed.)
[Not Synchronized playback]
Put a checkmark to [Output] on the FSMPlayerLite panel and select a playback channel from the drop-down menu. Then select [Not Synchro.] in the [Playback] field. Play back the copied data and stop at a point where you want to hear the audio. The audio data around the stop point are played back. You can change the duration of audio playback in 3 levels using the slide bar on the right side. The actual duration of audio playback varies depending on the frame rate of the recorded picture. Adjust the duration for every data to be played back.
[Synchronized playback]
Select [Synchro.] in the [Playback] field. You can play back simultaneously the audio and picture of the data downloaded in blocks via network or the data copied together with audio by a recorder. Only one playback channel is displayed in this case. Audio is not played back during other than normal playback (such as fast-forward playback and reverse playback). The [LipSync] slide bar should be adjusted according to the PC to be used and the recording status of data to be played back. In some cases, there may not be found an optimum position where the picture and audio synchronize with each other.

- In synchronized audio playback, the frequency of picture refreshing is reduced depending on the processing power of PC. When you want to playback giving priority to picture, select [Not Synchro.].
- The settings on this panel remain intact for the next start-up.
- Audio playback channel and picture display channel are not related.
- When data are played directly from a drive that is slow to read CD and DVD, audio may be output intermittently. Play back data after copying it to a HDD.

♦ File menu

Convert

When clicking during the playback is stopped, [Convert] screen appears. Specify the range to be converted and the camera number, and then press the [JPEG] or [AVI] button to convert and save the picture data collectively. Collective conversion requires adequate free space in the physical memory and the HDD for temporary files (the system partition and save drive). The limitations of available memory space and HDD space vary depending on your operating conditions.

Perform conversion starting from a small file that requires only several seconds to be converted while checking the state of the memory and the HDD.

♦ Search menu

Search

When clicking, the [Time Search] screen appears. Specify the date and time to be searched, and then click the [Search] button.

The picture of the specified time or around such time appears. The search may not be performed when the date and time information of the recorded contents is not chronological such as the data which is added to the existing data.

♦ Operation menu

For [Playback], [Stop], [Reverse Playback], [Forward Search], [Reverse Search], [Field Advance], [Field Reverse], or [Rewind], refer to the section of the “Operation panel.”

♦ Bookmark menu

A-, B-

Click to register the current playback position as Point A or Point B to repeat playback between those positions.

Repeat between A and B

Put a check mark to repeat playback between Point A and Point B you specified.

♦ View menu

Picture Size

When clicking, the options of [100%], [75%], [50%], and [25%] appear. Pictures are zoomed in or out according to the selected magnification.

Decode Level

When clicking, the options of [Fine], [Middle], and [Rough] appear. When setting the decode level to rough, the picture becomes rough and the playback update speed becomes faster.

Title Bar

When clicking, the options of [Date Time] and [Alarm] appear. Put a check mark to the item to be displayed on the screen.

♦ Grouping menu

Grouping Pattern

When clicking, the [Grouping Pattern] screen appears. When you click the [4 Multi], [6 Multi], [9 Multi], [10 Multi], [13 Multi], or [16 Multi], the split screen of the selected pattern appears. Click “Setting” to display the screen to set the display position of the camera in each screen.

♦ Menus appearing with right button clicking

To use the following functions, click the right button of the mouse on the screen to be operated. The following functions are performed only for the clicked screen.

<u>During playback:</u>

Picture Size

Refer to the section of the “View menu.”

Decode Level

Refer to the section of the “View menu.”

<u>During stopping playback:</u>

Copy

Click to copy the picture being displayed onto the clipboard.

Save As

When clicking, the [Save As] screen appears. You can save the picture being displayed as either a Windows bitmap file (.bmp) or a JPEG file (.jpg).

Picture Size

Refer to the section of the “View menu.”

Decode Level

Refer to the section of the “View menu.”

Print

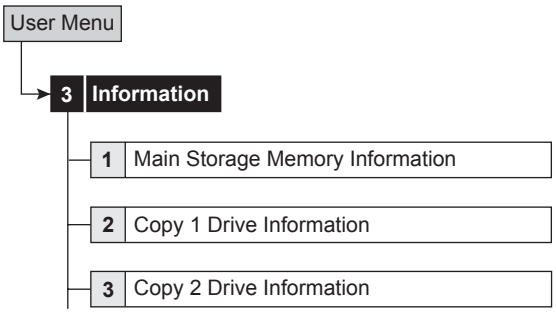
When clicking, the [Print] screen appears.

After setting the [Margins], [Printer Settings...] and other options, click [Print] button to print the picture being displayed.

- When playing the data recorded in frame recording, the outline of the picture may be serrated. In such case, change the picture size to larger setting.
- When loading the media with a lot of picture data copied, playback software may take time to be started up.

Information

This item is used to check the recording range of the main, copy 1, or copy 2 device.



[Main device]

step**1.** Select <Main Storage Memory Information>.

- "Partition (Alarm) Information" appears when "Alarm Recording Area" (☞ page 77 "Change Partition Setting") is set to other than "0 %."
- "Partition (LPA) Information" appears when "Long Pre-Alarm Area" (☞ page 77 "Change Partition Setting") is set to other than "0 %."

[Copy devices]

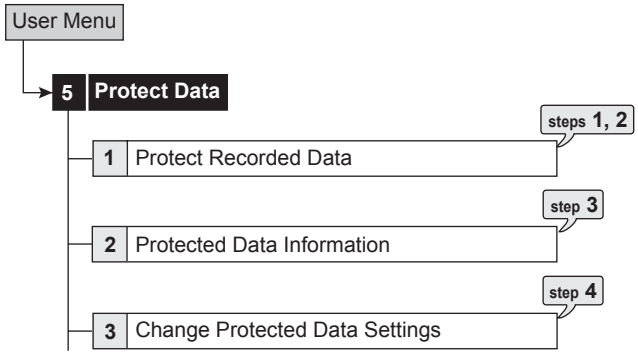
step**2.** Select the device to be checked from <Copy 1 Drive Information> and <Copy 2 Drive Information>.

step**3.** Select the desired group for displaying the information.
Update Information: Updates the recording information.
Media Eject: Ejects the media.

- When you display <Information> menu during recording or copying, the latest information is not displayed for the device other than main. Stop recording or copying first when checking such information.

■ Protect Data

Up to 500 specified areas can be locked preventing accidental deletion of important data. Only the data in the main device can be locked. When the main device is partitioned, the data in the normal and alarm areas can be locked.



step**1.** Set the start and end points of the data to be locked.
- The data in the area which is currently set to be played back (normal or alarm) can be locked.
- The points are set by the bookmark. Select the desired bookmark number.
- ☞ See page 82 for registering a bookmark.

step**2.** Select “Protect.”

The data is locked in 512 MB unit. For the date and time to be locked, the start or end point of one (or more) data block which including the specified bookmark number are registered, so the date and time registered may not be similar to those of the specified bookmark.

While recording, the data blocks which is recorded currently and is recorded next cannot be locked.

step**3.** To check the locked data, select the <Protected Data Information>.
- Select the area to be displayed in the <Select Source Device> (☞ page 39).

Search: Displays the picture of the start point of the selected area.
Check: Checks the device in which the locked area is recorded.

step**4.** To cancel the lock, select “Disable” of the desired area in the screen of <Change Protected Data Settings>.
Search: Displays the picture of the start point of the selected area.

The data cannot be locked when the start and end times are not set in order.

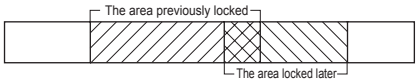
The data of the LPA area is locked automatically after recording. The number of areas available to be locked is up to 500 areas of normal, alarm, and LPA areas. Search is executed in search by alarm list. (☞ page 94)

When deleting the main device data including the locked data, the locked data is also deleted.

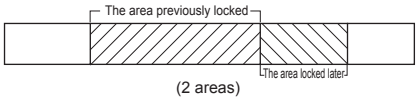
When the locked areas are overlapped, the lock function is as follows.

Example 1

<Protect Data> menu setting



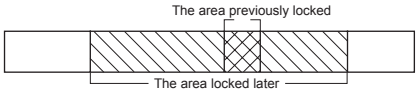
The registered data area



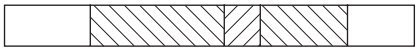
(2 areas)

Example 2

<Protect Data> menu setting



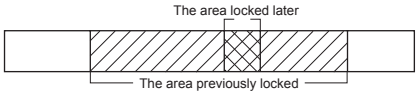
The registered data area



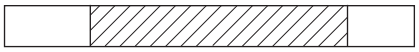
(3 areas)

Example 3

<Protect Data> menu setting



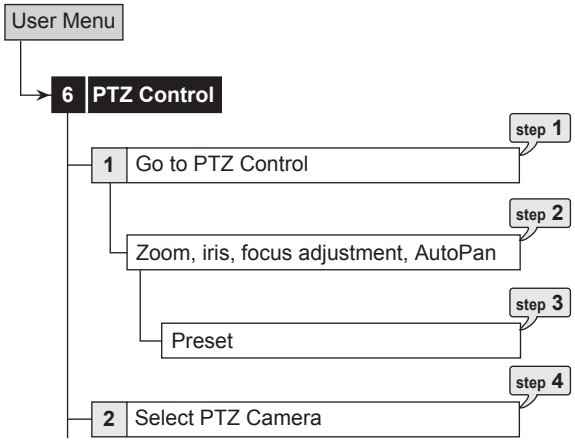
The registered data area



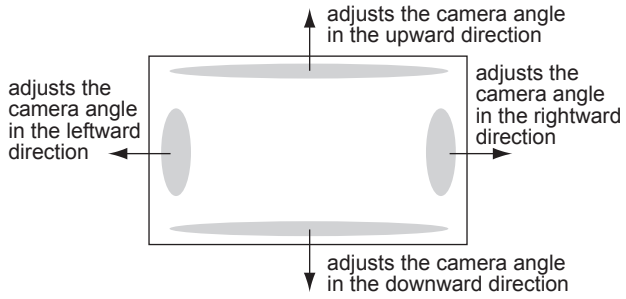
(1 area)
(The other areas set are not registered.)

This function is used to control the cameras connected via RS-232C or RS-422/485 terminal.

■ PTZ control using the menu



step1. Pan or tilt the PTZ camera connected.
- Click the gray area by using the mouse to adjust the camera angle.


adjusts the camera angle in the upward direction
adjusts the camera angle in the leftward direction
adjusts the camera angle in the rightward direction
adjusts the camera angle in the downward direction

step2. Adjust zoom, iris, and focus. And activate auto pan.

step3. Preset the viewing points 1 to 16.
- The preset points are registered to the PTZ camera for auto pan function.

step4. Switch the camera number to be controlled.
- The camera number to be controlled appears on the LCD display on the front panel.

```
01-01-2006 00:00:00
PTZ CAM1
```

<PTZ Control> can be set using the mouse only. You cannot set it using front panel buttons.

■ PTZ control using the front panel buttons

step1. Press the camera number button of the PTZ camera number to be controlled and display the picture in the single screen display.

step2. Press the PTZ button.
- The unit switches to PTZ mode and the button lights up. “PTZ” appears on the LCD display on the front panel during PTZ mode.

```
01-01-2006 00:00:00
PTZ
```

- The camera number to be controlled appears on the LCD display on the front panel.

```
01-01-2006 00:00:00
PTZ CAM1
```

step3. Control the camera.
Tilt: Press the TILT ▲ button to tilt the camera in the upward direction. Press the TILT ▼ button to tilt the camera in the downward direction.
Pan: Turn the SHUTTLE ring to the right to pan the camera in the rightward direction. Turn the SHUTTLE ring to the left to pan the camera in the leftward direction.
Camera zoom: Press the CAMERA ZOOM button and then turn the JOG dial to the left (wide) or right (tele) to adjust the camera zoom.
Focus: Press the FOCUS button and then turn the JOG dial to the left (far) or right (near) to adjust the focus of a camera.
Iris: Press the IRIS button and then turn the JOG dial to the left (close) or right (open) to adjust the iris of a camera.
Preset: Press the PRESET button and then press the camera number buttons within 3 seconds to preset the viewing points. Up to 16 points can be set.
Auto pan: Press the AUTO PAN button to activate the auto pan function of the camera.

During PTZ operation using front panel buttons, POWER button and functions related to playback do not work. Furthermore, menus cannot be displayed.

☞ See <PTZ Setting> on page 72 for the camera settings or other detailed settings for PTZ function.

ENGLISH

■ Settings concerning normal recording and alarm recording

This unit allows you to set the setting items for normal recording and alarm recording individually. It means, more detailed settings are possible, such as changing the recording rate of the camera of which the alarm signal is input while leaving the normal recording settings as they are.

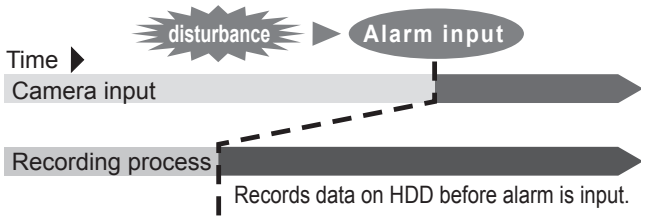
- The recording and playback cannot be performed properly when the clock of this unit does not run. Check that the clock of this unit is running before operation.
- The settings cannot be changed during normal recording and alarm recording. Change the setting after stopping recording. To pause the alarm input (up to 5 minutes), set the "Alarm Input" in the <Recording> menu to "Off."
- When the camera number with no camera connected is set in the <Set Recording Pattern A (Normal/Timer)> to <Set Recording Pattern D (Timer)>, the warning display appears when recording pictures (☞ see "Warnings and CALL OUT output" on page 108).

To activate normal recording and alarm recording, set the following items:

- Recording rate and picture grade for normal recording and alarm recording
  (<Normal Recording Menu> and <Alarm Recording Menu>)
- The camera selection during alarm recording
  ("Alarm Mode" in <Alarm Recording Menu>)
- Whether to execute pre-alarm recording
  ("Pre-Alarm Duration" in <Alarm Recording Menu>)
- The recording camera and trigger for alarm recording
  (<Alarm Camera Setting> and <Alarm Trigger In/Out>)

♦ Pre-alarm recording

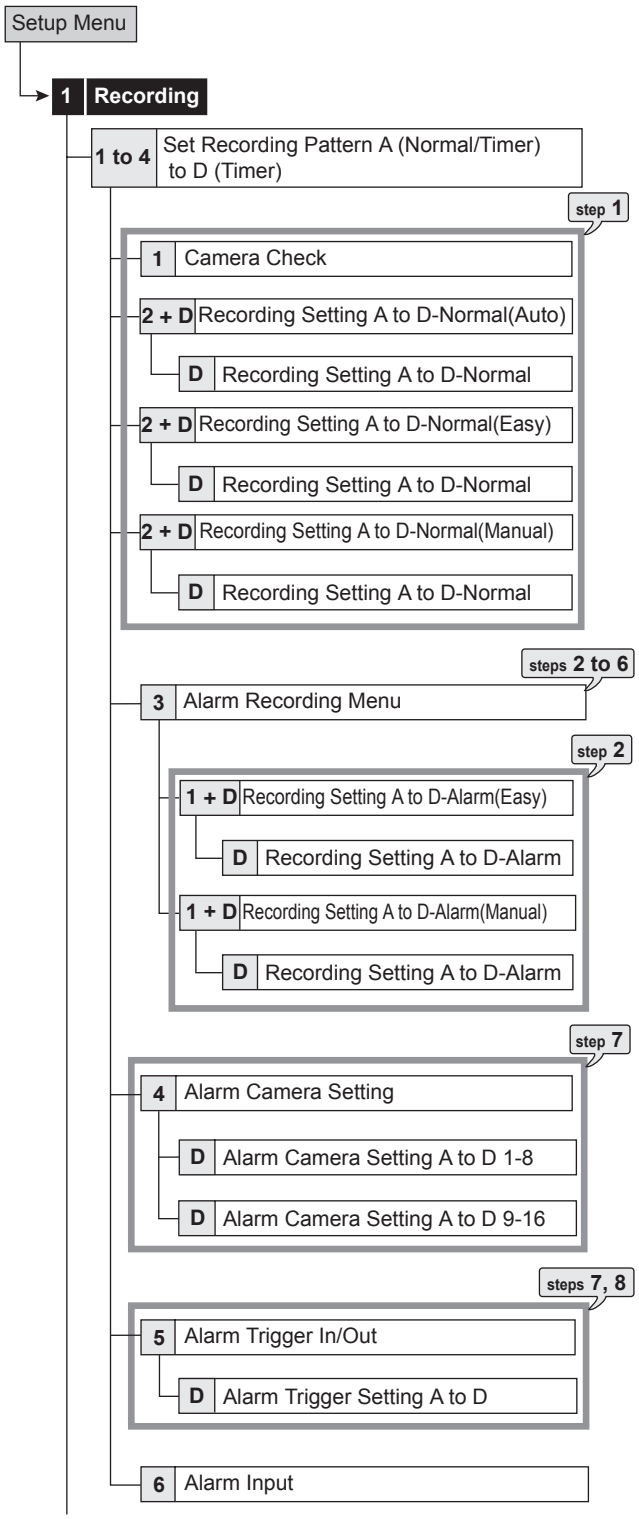
Pre-alarm recording is a function to start recording a few seconds before the ALARM IN terminal on the rear panel is grounded, motion is detected, or the alarm signal is input via LAN or RS-232C communication.



- The PRE-ALARM indicator illuminates during pre-alarm recording and during stand-by mode.
- Executes only when pre-alarm recording is set in the <Alarm Recording Menu>. After the input of an alarm signal, only the cameras set for alarm recording are used for recording.
- When a pre-alarm recording starts during normal recording, it may be executed for a different time period from the alarm setting.

■ Set Recording Pattern A (Normal/Timer) to D (Timer)

This item is used to make the recording settings for normal and alarm recordings.


Setup Menu
1 Recording
1 to 4 Set Recording Pattern A (Normal/Timer) to D (Timer)
step 1
1 Camera Check
2 + D Recording Setting A to D-Normal(Auto)
D Recording Setting A to D-Normal
2 + D Recording Setting A to D-Normal(Easy)
D Recording Setting A to D-Normal
2 + D Recording Setting A to D-Normal(Manual)
D Recording Setting A to D-Normal
steps 2 to 6
3 Alarm Recording Menu
step 2
1 + D Recording Setting A to D-Alarm(Easy)
D Recording Setting A to D-Alarm
1 + D Recording Setting A to D-Alarm(Manual)
D Recording Setting A to D-Alarm
step 7
4 Alarm Camera Setting
D Alarm Camera Setting A to D 1-8
D Alarm Camera Setting A to D 9-16
steps 7, 8
5 Alarm Trigger In/Out
D Alarm Trigger Setting A to D
6 Alarm Input

[Normal recording settings]

step**1.** Follow the steps 1 and 2 on ☞ page 91 to set the recording camera, frame or field recording, recording rate, and picture grade for normal recording.

After executing the camera check, the recording setting is made only for the camera numbers with the video signal input when using auto or easy setting.

<Estimated Recording Time>

- The continuous recordable time depending on the recording rate and the recording picture grade of normal recording is displayed as <Estimated Recording Time> on the bottom of the preview screen for normal recording.
- When the main device is partitioned, <Estimated Recording Time> shows the estimated recordable time for normal recording.

[Alarm recording settings]

step**2.** Set the frame or field recording, maximum recording rate per camera, and picture grade for alarm recording.

Easy: Sets the frame or field recording, maximum recording rate per camera, and picture grade for alarm recording to the same settings for all the camera numbers. When the recording rate is set to "– – –" for all the camera numbers, this disables alarm recording. Set the desired settings and then select "Execute."

- The preview screen appears automatically when the easy setting is executed.

Manual: Sets the frame or field recording, maximum recording rate, and picture grade for alarm recording individually for each camera number. When setting "– – –" for the recording rate, alarm recording is disabled for that camera number.

- Select "View" and display the preview screen to check the settings you have set.

The recording rate set for normal and alarm recordings are the maximum number of frames. The number may decrease depending on the number of cameras used for recording.

The field recording and frame recording can be mixed. However, when the total number of fields and frames becomes nearly 100, the recording may not follow the setting. The priority of the recording rate setting is, frame recording > field recording > large recording rate > small recording rate > small camera number > large camera number.

Make sure to check the settings in the preview screen after making the recording settings.

When the picture is recorded at the maximum recording rate, a picture from the camera that is not currently used for recording cannot be checked through communication.

When setting the frame recording, the recording rate display in the preview screen turns green.

The recording rate display turns red when the total value exceeds 100 pps.

step**3.** Select motion detection recording.

Alarm: Starts alarm recording when the motion is detected.

Normal: Starts normal recording when the motion is detected. The recording is executed at the picture grade and the recording rate set for normal recording. The recording is not registered in the alarm list.

Data is recorded in normal recording area when the main device is partitioned.

Set alarm trigger on step 8 to "MD-A," "MD-B," "External / MD-A," or "External / MD-B."

In case of recording pattern A, you can start normal recording by pressing the REC/REC STOP button while the unit does not perform motion detection recording.

In case of timer operation, normal recording is not performed and the unit turns to stand-by mode for motion detection. Recording is performed only by the camera which detects motion.

For normal recording due to motion detection, <Alarm Camera Setting> is not used and recording is performed only by the camera of which the motion is detected.

For alarm recording due to ground of rear terminal, recording is performed by the cameras set in <Alarm Camera Setting>.

When motion detection recording is set to "Normal," <Alarm Camera Setting> cannot be set. To change <Alarm Camera Setting>, switch the motion detection recording to "Alarm" once.

When you set the alarm recording trigger to "External & MD," normal recording due to motion detection is performed only during the rear terminal is grounded.

step**4.** Set the alarm mode.

Alarm CH: When alarm signal is input, performs alarm recording only by the cameras set for alarm recording. When there is an input of alarm signals from multiple sensors, alarm recording is performed by all the cameras to which alarm signals are input.

When alarm recording starts during normal recording, normal recording pauses while alarm recording is performed.

Alarm Plus: When an alarm signal is input during normal recording, performs alarm recording by the camera and the recording rate set for alarm recording while all the other cameras perform recording at the normal recording rate. The available recording rate for alarm and normal recordings is up to 100 pps in total.

When you have set alarm recording mode to Alarm Plus and then change the alarm recording rate to the value exceeding the available rate, alarm mode changes to Alarm CH automatically.

step**5.** Set the pre-alarm recording time in "Pre-Alarm Duration."

0 sec: Does not execute the pre-alarm recording.

- The pre-alarm recording time display turns red when the actual pre-alarm recording time becomes shorter than the set time depending on the alarm recording settings.

- When the pre-alarm recording time setting exceeds the maximum pre-alarm recordable time, the pre-alarm recording time display turns red. Set the time within the maximum recordable time. You can use the recording rate or picture grade for adjusting the pre-alarm recording time. Even if the time is set exceeding the maximum recordable time, the actual pre-alarm recording is performed for the maximum recordable time.
- When the alarm area is set, the alarm recording and pre-alarm recording are made in the alarm area. To playback the recorded data, set the <Select Source Device> (☞ page 39) to “Alarm.”
- In the case that the alarm recording mode is set to “Alarm CH,” recording with all the camera numbers set for alarm recording may not be possible when pre-alarm recording is carried out during normal recording.
- To perform pre-alarm recording by all the camera numbers set for alarm recording, use alarm recording mode without using normal recording. To perform with normal recording, set “Alarm Mode” to “Alarm Plus.”
- Pre-alarm recording is carried out at the recording rate of normal or alarm recording set for that time period and with the picture grade set for alarm recording.
- Recording time for pre-alarm recording is based on the alarm recording setting. For pre-alarm recording which is started during normal recording, the recording time may be shorter than the specified time depending on the normal recording setting.

step**6.** Set the alarm recording time in “Post-Alarm Duration.”
Manual: Continues alarm recording until the ALARM IN terminal is not grounded.

step**7.** Set the recording camera for each sensor connected.
- Select “View” and display the overview screen to check the settings of all the sensors.

- The multiple camera numbers can be set for one sensor input.

step**8.** Set the trigger of alarm recording for each sensor connected.
External & MD-A: Starts alarm recording when the motion A is detected while the ALARM IN terminal is grounded.
External & MD-B: Starts alarm recording when the motion B is detected while the ALARM IN terminal is grounded.
External: Starts alarm recording only when the ALARM IN terminal is grounded.
External / MD-A: Starts alarm recording when the ALARM IN terminal is grounded or the motion A is detected.
External / MD-B: Starts alarm recording when the ALARM IN terminal is grounded or the motion B is detected.
MD-A: Starts alarm recording only when the motion A is detected.
MD-B: Starts alarm recording only when the motion B is detected.

- When setting the trigger to “MD-A,” “MD-B,” “External / MD-A,” “External / MD-B,” “External & MD-A,” or “External & MD-B,” the motion detection function becomes active immediately after exiting <Set Recording Pattern A (Normal/Timer) to D (Timer)>. To stop the input of alarm signals, set the “Alarm Input” setting in the <Recording> menu to “Off.”

step**9.** Set the PTZ camera preset for the sensor of which trigger is set to “External” on step 8.
Preset 1 to 16: When the ALARM IN terminal corresponding to the sensor is grounded, the angle of corresponding camera is adjusted to the preset point set on this step. (The camera angle is not adjusted when the trigger is set to the item other than “External.”)
– – –: Does not adjust the camera angle.
- Select “View” and display the overview screen to check all the settings set on steps 8 and 9.

Alarm recording

- When the alarm recording or the emergency recording is executed during timer recording, the end time of the timer recording is extended until the alarm recording or the emergency recording is completed.
- When the alarm recording trigger is set to “External / MD-A” or “External / MD-B,” the priority is given to the latest alarm input.
- When the alarm recording trigger is set to “External / MD-A” or “External / MD-B,” and the alarm recording time is set to “Manual,” the alarm recording stops 2 seconds after the input of motion detection even if the ALARM IN terminal is being grounded. (When the alarm recording time for this recording according to the motion detection is set to “Manual,” the actual recording time is 2 seconds.)
- When power failure occurs during alarm recording or emergency recording, the alarm recording or the emergency recording is cancelled after returning from the power failure.
- When alarms are input for multiple sensors at the same time, not all the alarms may be registered to the alarm list.

Frame recording and field recording

- In PAL signal system, one picture is consist of two screens, odd and even. The unit records only the screens of odd in case of field recording. In case of frame recording, both of the screens (odd and even) are recorded.
- Frame recording is suitable for storing the data in the high picture quality, however, the data capacity is twice as large as that of the field recording of the same picture grade (1 frame = 2 fields). The picture may be looked like vibrating because one picture is consisted by two screens.

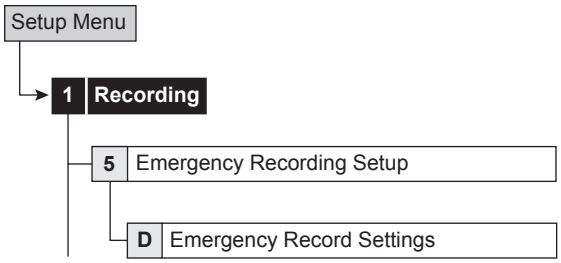
◆ Alarm Input

This item is used to stop the alarm input manually. When setting “Alarm Input” to “Off,” the alarm input is stopped for 5 minutes. To set the <Recording> menu while the alarm recording occurs continuously, stop the alarm input first to stop recording. “Alarm Input” function is available for ALARM IN terminal on the rear panel, motion detection, emergency recording, and communication port. To cancel the prohibition of alarm input manually, set it to “On” and then exit the <Recording> menu. It is cancelled automatically after 5 minutes.

■ Emergency Recording Setup

This item is used to set the emergency recording settings. When the EMERGENCY terminal is grounded by the alarm sensor while both of the MAIN switch on the rear panel and the POWER button on the front panel are turned ON, emergency recording starts automatically overriding all the other settings even during timer recording or the unit is in stop mode.

- Emergency recording is not performed while the MAIN switch or POWER button is turned OFF or while timer recording stand-by mode.
- The setting of the <Recording> menu cannot be changed during normal recording or alarm recording. To change setting during recording, stop recording in case of normal recording. In case of alarm recording, when the "Alarm Input" in the <Recording> menu is set to "Off," the alarm input is not accepted for 5 minutes. When you stop recording during this time, the setting change of the <Recording> menu is available.



[Recording]

step**1.** Select the frame or field recording.

step**2.** Set the long pre-alarm recording time in "Pre-alarm Duration."
0 min: Does not execute the long pre-alarm recording.

step**3.** Set the emergency recording time in "Post-alarm Duration."

step**4.** Set the maximum recording rate.

[Camera Setting]

step**5.** Set the recording camera.
- The button function changes between "All Off" and "All On" each time you select this button.

step**6.** Select "Execute."
- The preview screen appears.

♦ Emergency recording

1) The picture grade is "L6-34KB" and the recording rate is set to the value obtained by dividing the maximum emergency recording rate by the number of specified cameras.

- When the LPA area is set in the main device, the emergency recording data is stored in the LPA area and is automatically locked in 512 MB unit including the emergency recording data in order to prevent overwriting the data.

  In LPA area, the data is always recorded at the rate set for alarm recording regardless of an input of the emergency signal. Therefore, when the emergency recording is started from the mid-part of the data block, the data recorded before the ground of the EMERGENCY terminal is stored in the locked area along with the emergency recording.
- When you set the long pre-alarm recording time without setting the LPA area, long pre-alarm recording is carried out using the internal memory for pre-alarm recording, so long pre-alarm recording is performed for the short time period regardless of the setting.
- When emergency recording is carried out using the LPA area, data is not stored chronologically and alarms are listed out of sequence. Be careful when searching for the desired picture.
- When power failure occurs during emergency recording, the emergency recording is cancelled after returning from the power failure.
- When emergency recording is carried out during timer recording, the end time of the timer recording is extended until the emergency recording is completed. The timer recording is finished after completing the emergency recording.

2) Cameras to be used

   Cameras which are set in <Emergency Recording Setup> are used.

3) During emergency recording:
   - "E-REC" is displayed on the screen in red.
   - The camera number buttons and camera number display on the screen which are used for emergency recording flash.

4) Emergency recording is registered in the alarm list and displayed in magenta.

♦ Long pre-alarm recording

Long pre-alarm recording is a function to perform pre-alarm recording for a maximum of 60 minutes before the emergency recording is started.

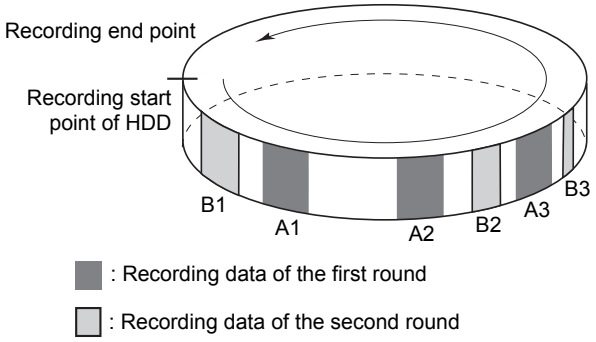
- To set LPA area, set the desired capacity in “Long Pre-Alarm Area” (☞ page 77 “Change Partition Setting”).
- When the long pre-alarm recording is started during normal recording, not all the camera numbers set for long pre-alarm recording may be used for recording.
- To perform the long pre-alarm recording by all the camera numbers set for emergency recording:
  - i) To perform with normal recording:
    Set all the desired cameras to normal recording setting. Long pre-alarm recording is performed at the picture grade of “L6-34KB” regardless of the setting and at the recording rate set for normal recording.
  - ii) To perform with normal and alarm recordings:
    Set the “Alarm Mode” to “Alarm Plus.”
    (Normal recording) Set all the desired cameras to normal recording setting. Long pre-alarm recording is performed at the picture grade of “L6-34KB” regardless of the setting and at the recording rate set for normal recording.
    (Alarm recording) During alarm recording, long pre-alarm recording is performed at the picture grade of “L6-34KB” regardless of the setting. And for only the cameras used for alarm recording, long pre-alarm recording is performed at the alarm recording rate.
  - iii) To perform with alarm recording:
    Set the “Alarm Mode” to “Alarm Plus.”
    Long pre-alarm recording is performed at the picture grade of “L6-34KB” regardless of the setting and at the recording rate set for alarm recording.
- Long pre-alarm recording is executed with the recording rate of the normal or alarm recording set for that time period and with the picture grade of “L6-34KB.”
- **Cautionary notes for long pre-alarm recording**

- When long pre-alarm recording time is set, the unit records the data in LPA area at all times. Set the recording rate and picture grade carefully when long pre-alarm recording is performed simultaneously with normal or alarm recording. Depending on the setting, picture may be missed during recording. Particularly, in case of recording for serial bus HDD, set the recording rate not to exceed 100 pps.
- The recording for LPA area is carried out for the longer time than the specified because the data in the LPA area is processed in 512 MB unit.
- In the LPA area, alarm list or recording data may not be stored in the chronological sequence. The easier way to search the desired data is, before searching the data, search the oldest recording data using <Search by Time and Date>.
- In the LPA area, all the existed recording data is deleted and overwritten when the capacity becomes full. It is recommended to make copy of the important data to the other medium using the function such as copy 2.

  To start copy from the oldest data, set the copy start time to the start time of recording which can be checked in <Search by Time and Date>. Copy is carried out from the the oldest data.
- In the LPA area, data is recorded at all times and when the emergency is input, the data is locked to prevent overwriting.

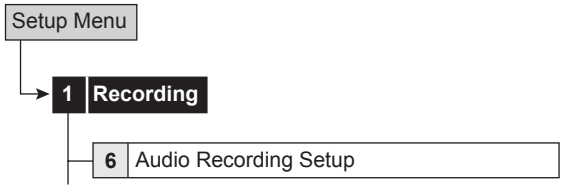
  For example, when the data A1 to A3 and B1 to B3 are recorded in the first and second rounds of recording respectively, the chronological sequence of the recording data is: A1 → A2 → A3 → B1 → B2 → B3.

  However, storing order of the data on HDD is: B1 → A1 → A2 → B2 → A3 → B3, and the data is played back or listed in alarm list in that order.



■ Audio Recording Setup

This item is used to set the audio recording. This unit simultaneously records audio along with the picture for camera number 1. When recording audio, HDD space is used faster than when only picture is recorded.



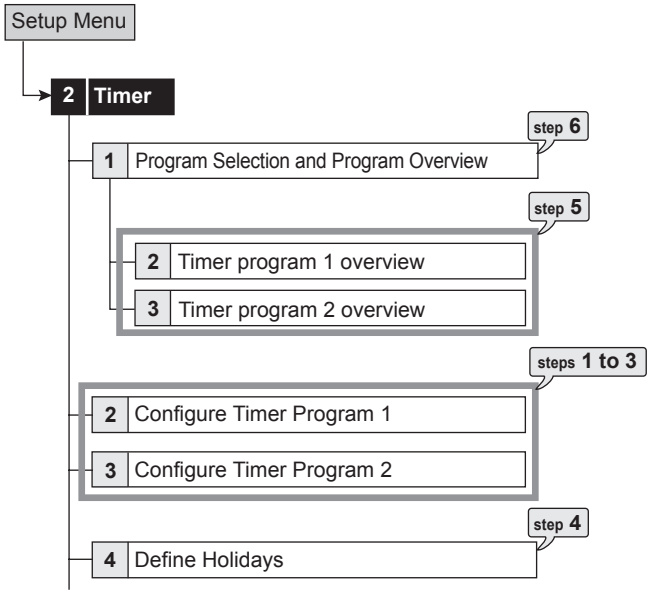
step**1.** Set the audio recording mode.
Off: Does not record audio.
Normal: Records pictures and audio during recording (normal, alarm, or emergency recording).
Alarm: Records pictures and audio during alarm or emergency recording.

- To record audio, the camera number 1 must be set to record. The camera number 1 corresponds to AUDIO IN 1 terminal.
- When the recording mode changes from normal recording to alarm recording, or from alarm recording to normal recording, audio may be cut off temporarily. This is normal and not a malfunction.
- When alarm area is set in the main device and “Audio Recording Mode” is set to “Alarm,” the audio is recorded in the alarm area with the picture. (☞ page 77)
- To copy the recorded audio as the digital data, copy the picture of camera number 1.

  You can hear live audio any time except during playback. The live audio switches to playback audio when you start playback or triplex playback.

■ Timer

This menu is used to program the timer of 2 most frequently used operation patterns. Also, by individually setting recording camera, recording rate, and picture grade for normal/alarm recording to <Set Recording Pattern A (Normal/Timer)> to <Set Recording Pattern D (Timer)> (☞ page 49), settings can be changed instantly by switching “Program Mode.”



❗ Before you start recording, accurately set the present date and time (☞ page 58).

[Setting the program:]

step1. Select the timer program number to be set.
- Up to 8 programs can be set in one program number.

Clear: Clears all the settings for the selected line.

❗ When the recording period of 2 or more programs are overlapped, the higher-numbered program is given priority for recording. (☞ the next page.)

step2. Set the detailed settings for each program line.

2-1 Day of The Week
Set the day of the week from Sunday to Saturday.
Everyday: Records at the programmed time everyday.
Special: Records for the period specified in special day of the week.
Holiday: Applies holidays specified in the holiday settings. This setting is carried out by priority, regardless of the program number.

2-2 Time
Set the program start and end time. (The time is indicated using the 24-hour system.)

2-3 Program Mode
Record A to Record D: Records by using the cameras and rates which are set in <Set Recording Pattern A (Normal/Timer)> to <Set Recording Pattern D (Timer)> (☞ page 49).
Copy 2: Makes the backup of the data to the copy 2 device.
Skip: Temporarily skips the timer recording (the recording does not perform for the specified time period of that program).

❗ When you make the backup in timer recording, set the start and end time so that the backup time is 10 minutes or more.

2-4 Motion Detection
Active: Performs the motion detection function during timer recording.
Inactive: Does not perform the motion detection function during timer recording.

❗ When the motion detection is set to “Active” in “Record A,” the motion detection pattern of the alarm trigger which is set in <Set Recording Pattern A (Normal/Timer)> is used. When the alarm trigger is set to “External,” the motion detection recording is not available in the timer recording even if the motion detection is set to “Active” in timer setting.

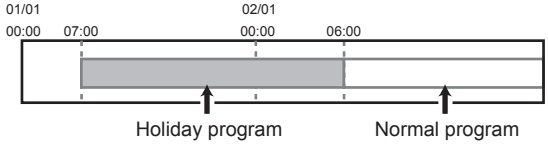
❗ When the trigger for alarm recording is set to “External & MD-A” or “External & MD-B,” and the motion detection for timer setting is set to “Inactive,” the recording is not started even when the ALARM IN terminal is grounded.

step3. Set the special day of the week.
- Set the start and end day of the week. The time period between start and end day of the week set here becomes available when setting “Day of The Week” on step 2-1 to “Special.”

step4. Set the holidays.
- Set the date and month for the holiday operation.

❗ When setting the holiday program to continue for the next day, the holiday program is executed until the set end time, and then the program returns to the normal program.

For example, when 01/01 is set for holiday:
From 01/01 07:00 to 02/01 06:00, program mode is set to Holiday.
From 02/01 06:00, program mode is set to the normal program.



❗ When you set both of normal program and holiday program to continue for the next day (not including the normal program ends at 00:00 on the next day) (ex: 20:00 to 07:00), the normal program is not performed even when the holiday program ends within the time period set for normal program. The unit starts normal program after that programmed time is over and start time of the next program is reached.

When you want to set timer recording for 24 hours a day, it is recommended to set program time from 00:00 to 00:00.

step5. Display the overview screen to check the timer recording settings you have set.

[Carrying out timer recording:]

step6. Select the program number to be used from program 1 or 2 in the program selection.

step7. Exit the menu screen.

step**8.** Press the TIMER button on the front panel of the unit.
- The TIMER indicator lights up.
- The power turns off and the unit switches to the timer recording stand-by mode. When the present time is within the programmed time period for the timer recording, timer recording starts.
- Timer recording and timer recording stand-by mode can be cancelled by pressing the TIMER button again for more than 2 seconds.

TIMER button does not work during alarm recording.

When setting a holiday in holiday setting and select “Holiday” in the day of the week settings, the program selected with “Holiday” is given priority over the other programs.

When alarm recording starts during timer operation, alarm recording continues even when timer recording end time reaches. Timer recording finishes when alarm recording is completed.

When alarm or emergency recording starts during timer operation and start time of the next timer program reaches, emergency recording continues for the specified recording time and timer program starts after completion of emergency recording.

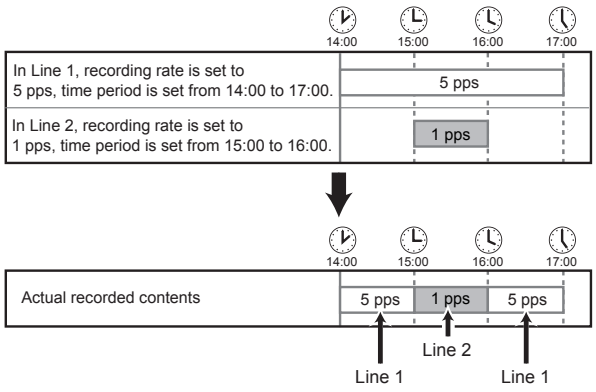
In case of alarm recording, timer program starts immediately on the specified start time.

♦ Overlapped timer settings

When the recording period of 2 or more programs are overlapped, the unit gives priority to the higher-numbered program.

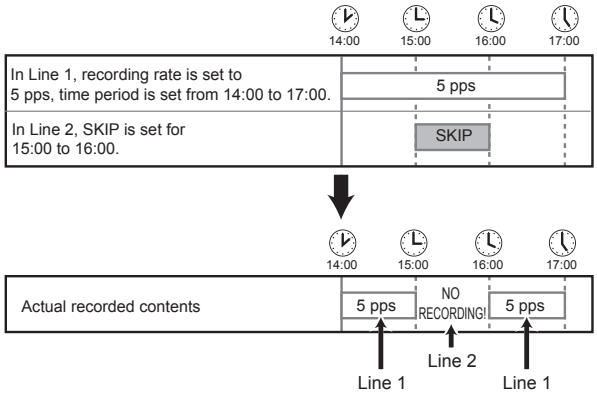
Example 1
- Line 1 is set for 14:00 to 17:00 with the normal recording rate of 5 pps.
- Line 2 is set for 15:00 to 16:00 with the normal recording rate of 1 pps.

Under this condition, the unit gives priority to Line 2 for the duration of the overlapping period, from 15:00 to 16:00. The unit operates as shown in the chart below.



Example 2
- Line 1 is set for 14:00 to 17:00 with the normal recording rate of 5 pps.
- Line 2 is set for 15:00 to 16:00 with the SKIP setting.

Again, the unit gives priority to Line 2 for the duration of the overlapped period. As shown in the illustration below, the unit activates the Skip setting from 15:00 to 16:00.

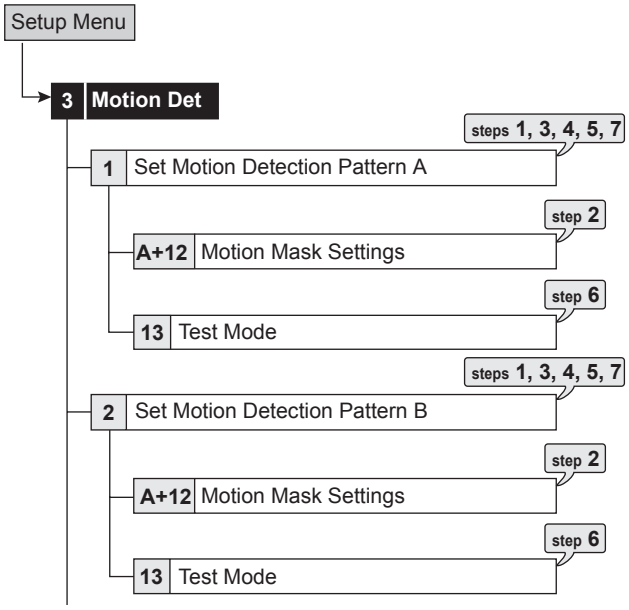


Recording is not performed correctly if there is an error in the setting. To prevent such errors for timer recording, this unit notifies errors using methods shown below. If there is an error in the setting, take the necessary procedures shown below.

Unit status	Description of error	Countermeasure	Page
TIMER indicator flashes and the series of short beeps (beep-beep-beep) sounds.	1) The date/time is not set. 2) Timer program setting has not been set to operate.	1) Set the date/time. 2) Set the correct program.	58 54, 55
TIMER button does not work.	1) Menu is being displayed. 2) Program is currently being set.	• Exit the menu screen.	-
Timer recording does not perform even when the programmed time is reached.	1) Repeat recording is set to "Repeat Off," and there is no HDD space left.	• Clear the warning display. • Set the repeat recording to "Repeat On."	77

■ Set Motion Detection Pattern A/Set Motion Detection Pattern B

This menu is used to set the conditions of the motion detection function which starts alarm recording when detecting motion in the picture supplied from the connected camera. You can set 2 types of motion detection settings (Motion Detection A and Motion Detection B).



step1. Set the camera number for which motion detection settings are made.
- The motion detection settings can be made for each camera individually.

Motion detection function does not perform while the motion detection setting screen is displayed.

step2. Set the motion mask setting.
- Set the active area for the motion detection function.
- Any of the 506 detection areas of individually loaded picture for each connected camera can be set.
- Active areas are indicated in red, inactive areas are indicated in blue, and when setting the multiple areas at a time, areas being set are colorless.

Set to default: Sets the motion mask setting area to the default setting (the center part of the screen is active).
Enable all: Sets all the areas to be activated.
Disable all: Sets all the areas to be inactivated.
Manual: Sets the motion mask setting areas manually (or uses the previous manual setting).

When you want to change the detection area which has been set previously, select “Manual.” Otherwise, the detection area is reset to the respective default settings.

[When setting by the mouse:]
- To set the area one by one, left-click the desired area. The area switches between active and inactive each time you click the mouse.
- To set the multiple areas at a time, right-click the start point of the active area (to cancel to set the start point, left-click on the start point), and then right-click again on the end point. The frame of the designated area displays in yellow and the areas being set become colorless. The area switches between active and inactive each time you left-click the mouse in the selected area. The setting is completed with right-clicking on the area outside of the designated areas after determining active/inactive.

[When setting by the front panel buttons:]
- To set the area one by one, press MD AREA SET UP (camera number 13) button and select the desired area using ▲, ▼, ◀, ▶ buttons, and then press the MD DOT ON/OFF (camera number 9) button. The area switches between active and inactive each time you press the button.
- To set the multiple areas at a time, press MD AREA SET UP button and select the start point using ▲, ▼, ◀, ▶ buttons, and then press MD AREA SET UP button again. To select the end point, use ▲, ▼, ◀, ▶ buttons and then press MD AREA SET UP button. The frame of the designated area displays in yellow and the area switches between active and inactive each time you press the MD DOT ON/OFF button. The setting is completed by pressing the MD AREA SET UP button again after determining active/inactive.

It is possible to set multiple areas for one camera.

The background picture displays the picture supplied from the selected camera.

step3. Set the sensitivity of detecting the changes of loaded picture.
- The sensitivity is divided into 5 levels of difference in the change of brightness.

When the sensitivity is set to “High,” the motion detection may become too sensitive and it may detect even flickering of the fluorescent lighting.

step4. Set the motion threshold.
- Set the minimum number of areas for starting the motion detection operation from the number of active areas within the detection area.
- Motion detection function operates when detecting the change that exceeds the number of areas set on this step.

Set “Motion Threshold” to the number less than that of the active areas in the detection area. The motion detection function does not operate when setting “Motion Threshold” to a value exceeds that number.

step5. Set the reference interval time.
- This item is used to set the detecting interval. By setting this item, the motion detection works for the objects which move both fast and slowly. Set the longer interval for the object which moves slower and the shorter interval for the object moves faster.

step**6.** Test the motion detection function on the condition you have set.
- The color of the area detecting motion changes.

step**7.** To copy another motion detection settings, use “Same as settings.”
- Select “Copy Motion A” to copy the setting for the same camera number of Motion A.
- Select “Copy Motion B” to copy the setting for the same camera number of Motion B.

- When change is detected continuously, some functions such as setting change are not available because alarm recording is also continuously performed. In this case, motion detection function can be forcibly stopped for five minutes by setting the “Alarm Input” in the <Recording> menu to “Off.” You can change the settings by stopping recording during that period. This stopping is automatically released five minutes after the operation, and registered in the system log list. When you cancel the prohibition of alarm input manually, set it to “On.”
- When both of the ALARM IN terminal on the rear panel and the motion detection are set for the alarm recording trigger, the ALARM IN terminal on the rear panel is always given priority when both of the signals are input at the same time.
- The M-DET indicator lights up while the motion detection function is in operation.
- The motion detection of this unit may not operate correctly depending on the conditions of input video signals especially when the “Sensitivity” is set to high setting. Be careful when connecting to a system, etc. that is set to notify the alarm when the motion detection function of this unit is operated.
- To perform alarm recording for motion detection, set trigger for alarm recording to “MD-A,” “MD-B,” “External / MD-A,” “External / MD-B,” “External & MD-A” or “External & MD-B,” and set alarm recording rate of the corresponding camera number to other than “– – –.”
- The motion detection of this unit works by detecting the changes of brightness. So, the malfunction due to the change caused by the lightning or sunlight may occur, and motion detection may not work on the conditions such as the colors of the background and the clothes are the same.

  Be sure to test this function sufficiently before operation.
- When the alarm of motion detection is input quite frequently, operational speed of the functions such as alarm recording, communication, and screen display may become slow. It is recommended to use normal recording for the place where the motion is constantly detected.
- The motion detection is performed even during PTZ operation.

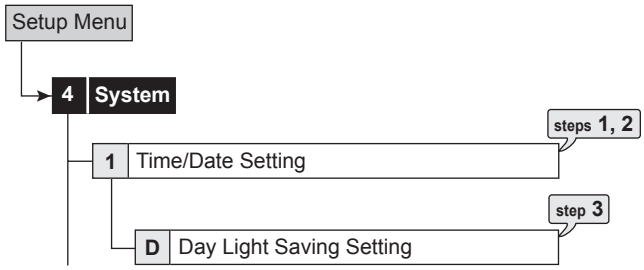
■ Time/Date Setting

This item is used to set the present date, time, and auto daylight saving. Auto daylight saving function is used to automatically gain the clock of the unit an hour for the specified time period.

Start/end time of the auto daylight savings can be checked and if needed, changed.

❗ Before you start recording, accurately set the present date and time.

❗ The recording and playback are not performed properly when the clock of this unit does not run. Check that the clock of this unit is running before operation.



step**1.** Set the present date, month, year, hour, minute, and second.

step**2.** Select the desired setting for daylight saving.
Auto: Automatically adjust forward or back an hour for the time period set in the <Day Light Saving Setting>.
Off: Auto daylight saving function is not used.

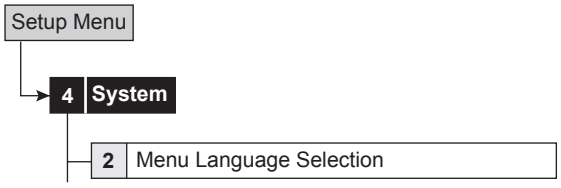
step**3.** Date and time of Auto Day Light Saving Setting can be adjusted as needed.

➡ The time is indicated using the 24-hour system.

➡ This unit uses 4 digits to display the year. The available display range is 37 years between 1/1/2001 to 31/12/2037. The unit is also equipped with a function to automatically calculate leap years. The year returns to 2001 after 31/12/2037.

■ Menu Language Selection

This item is used to select the language of the menu screen display from 6 languages. As “ENGLISH” is selected for the initial setting, follow the procedure below if you want to select a language other than “ENGLISH.”



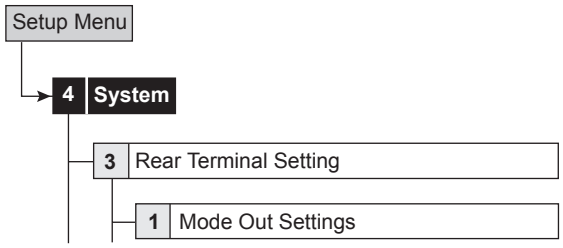
step**1.** Set the desired language.
- Select “Execute” when you change the language.
- When the language is changed, this unit automatically restarts after turning off the power. After restart, the menu is displayed in the selected language.

❗ You cannot change the language during recording.

■ Rear Terminal Setting

♦ Mode Out Settings

This item is used to output the status of this unit from the MODE OUT terminals on the rear panel. There are 4 MODE OUT terminals. Set output signal for each terminal individually.



[Mode Out 1 to 4]

step**1.** Set the mode out terminal settings from 1 to 4.
Recording: Outputs signal during recording.
Playing: Outputs signal during playback.
Low Memory: Outputs signal when the remaining HDD capacity reaches the value specified in “Low Memory Alarm Setting.”
Power: Outputs signal when the power of the unit turns on.
Alarm: Outputs signals during alarm recording.
LAN: Controls the output of signal via the PC connected.
Off: Does not output signal.
- By using “Polarity,” the output condition of MODE OUT can be changed.

Open: Opens output when the mode out is active.
Close: Closes output when the mode out is active.

❗ When low memory warning from MODE OUT terminal is active, the unit keeps outputting MODE OUT signal even when the power is turned off by pressing POWER button.

[Low Memory Alarm Setting]

This item is used to output a warning when the remaining capacity becomes low during recording. Set the desired device and remaining capacity for this warning.

➡ A warning is output using the following methods when the remaining capacity becomes low during recording.
- The recorded capacity of HDD displays in red when the operational mode is set to be displayed.
- A buzzer sounds when “Buzzer” is set to “Remain.”

step**2.** Set the desired device.
Main-Normal: Displays a warning of low normal area capacity.
Main-Alarm: Displays a warning of low alarm area capacity.
Main-LPA: Displays a warning of low LPA area capacity.
Copy 2: Displays a warning of low copy 2 device capacity.
Off: Does not display a warning of low HDD capacity.

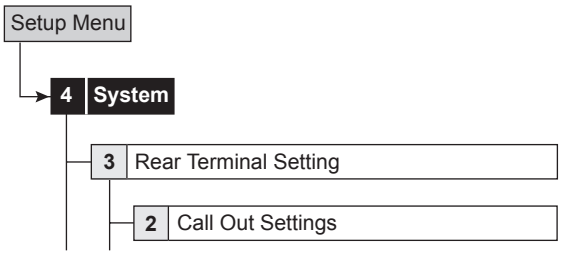
❗ “Main-Alarm” appears when “Alarm Recording Area” (☞ page 77 “Change Partition Setting”) is set to other than “0 %.”

❗ “Main-LPA” appears when “Long Pre-Alarm Area” (☞ page 77 “Change Partition Setting”) is set to other than “0 %.”

step**3.** Set the desired capacity.
- Set the remaining capacity of each device to output signal.

◆ Call Out Settings

This item is used to output warning signals from the CALL OUT terminal to the device connected when the capacity becomes full or reaches to the specified value.



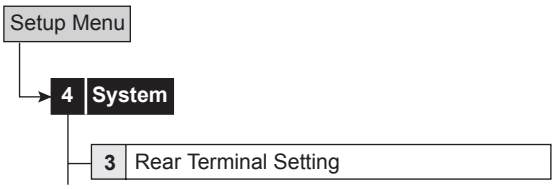
step**1.** Set the desired capacity for each area.
Off: Does not output a signal.

- "Alarm Recording Area" can be set when "Alarm Recording Area" (☞ page 77 "Change Partition Setting") is set to other than "0 %."
- "LPA Recording Area" can be set when "Long Pre-Alarm Area" (☞ page 77 "Change Partition Setting") is set to other than "0 %."
- Call out settings use the photo-coupler output to decrease the malfunctions due to wiring. See "CALL OUT output terminal" (☞ page 19) for the proper connection.
- For the relationship between the warning display and CALL OUT signal output, ☞ see page 108. The warning display of the item written "Fixed" in the CALL OUT output column displays unconditionally. For the item written "Selectable," you can set the condition to output CALL OUT signal.

  For example, the buzzer can be set to sound when reaching the value set in "Normal Recording Area," "Alarm Recording Area," "LPA Recording Area," or "Copy 2" while "Buzzer" is set to "Warning."

◆ Key Sound

This item is used to make a sound when using the operational buttons, JOG dial, and SHUTTLE ring.



step**1.** Set the key sound to on or off.

◆ Buzzer

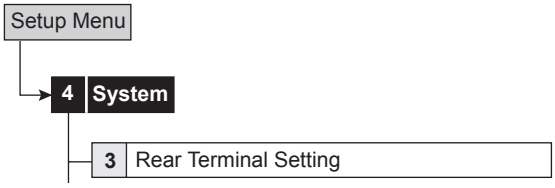
This item is used for a buzzer to sound when the remaining main or copy 2 device capacity reaches the value set in "Low Memory Alarm Setting" (☞ page 58). Other than the above, it is possible to set the buzzer to sound when starting alarm recording or emergency recording or when a warning is displayed.

To sound a buzzer only when reaching a specified remaining HDD capacity:

1) Set "Buzzer" to "Remain."
2) Set the remaining capacity in "Low Memory Alarm Setting."

To sound a buzzer when reaching the specified remaining HDD capacity or when a warning is displayed:

1) Set "Buzzer" to "Warning."
2) Set the remaining HDD capacity in the "Call Out Settings."



step**1.** Set the desired buzzer setting.

SETTING / BUZZER	Remain	Warning	Alarm	LAN	Off
When reaching the remaining capacity set in "Low Memory Alarm Setting"	ON	OFF	OFF	OFF	OFF
When a failure occurs and a warning is displayed	OFF	ON	OFF	OFF	OFF
When an alarm recording or emergency recording is started	OFF	OFF	ON	OFF	OFF
When controlling the buzzer to be sound via the personal computer	OFF	OFF	OFF	ON	OFF

- When you set buzzer to "LAN," the buzzer is controlled remotely via RS-232C command, etc.
- When "Triplex" is set to "Mode 3" or "Mode 5," buzzer does not sound. (☞ page 67.)

■ Password Setting

This menu is used to set the password for the lock function. This unit is equipped with 2 lock functions:

SIMPLE LOCK: Does not require to enter a password when unlocking.

PASSWORD LOCK: Requires to enter a password when unlocking.

- When the password for unlocking is not set, lock function executes in SIMPLE LOCK.
- When the password for unlocking is set, lock function executes in PASSWORD LOCK.

When the MAIN switch on the rear panel is set to OFF or when a menu is displayed, SIMPLE LOCK and PASSWORD LOCK cannot be turned on/off.

◆ SIMPLE LOCK

When SIMPLE LOCK is turned on, all the operations become inoperable and the unit is locked in the current mode.

● Activating the simple lock

step**1.** Press the LOCK button while the MAIN switch is set to ON.
- The lock turns on and the LOCK indicator lights up.

● Releasing the simple lock

step**1.** Press the LOCK button for more than 2 seconds.
- The lock is released and the LOCK indicator turns off.

◆ PASSWORD LOCK

There are 2 types of PASSWORD LOCK, “Operation control” and “Disk management.”

“Operation control” has 3 levels of lock (levels 1 to 3).

“Disk management” locks the settings of <Data Clear> for main device (☞ page 79).

● Using “Operation control” of PASSWORD LOCK (level 1 to 3)

1) Input the PASSWORD of levels 1 to 3.
2) Press the LOCK button to activate the PASSWORD LOCK.
   - The PASSWORD LOCK of level 1 turns on.

When the PASSWORD LOCK of level 1 turns on, all the operations except password lock release and help are locked.

3) Unlock the PASSWORD LOCK of level 1.
   - The PASSWORD LOCK of level 2 turns on.

When the PASSWORD LOCK of level 2 turns on, the following operations are locked. Buttons and menu other than mentioned below can be operated.
- On the front of the unit: POWER, REC/STOP, and TIMER buttons
- On the remote controller: REC/STOP and TIMER ON/OFF buttons
- Menu operations of <Setup Menu> and <System Menu>

4) Unlock the PASSWORD LOCK of level 2.
   - The PASSWORD LOCK of level 3 turns on.

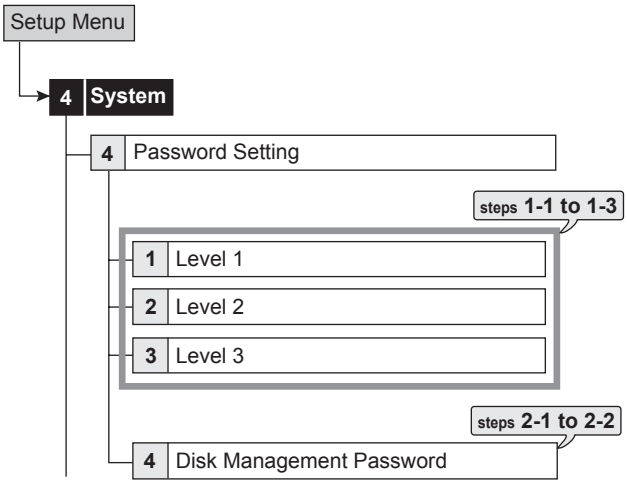
When the PASSWORD LOCK of level 3 turns on, the following operations are locked.
- Menu operations of <Setup Menu> and <System Menu>

5) Unlock the PASSWORD LOCK of level 3.
   - The PASSWORD LOCK of all the levels are released.

You can operate all the functions.

◆ Registering the PASSWORD

Register a 4-digit number for PASSWORD. When setting the number of each digit, choose the number from 0 to 9.



[for the levels 1 to 3]

step**1**-1. Display the password setting screen of the desired level.

step**1**-2. Input 4 digits of the password by pressing the numbers on the screen.

To input the password using the buttons on the front panel, use the camera number buttons. 1 to 9 are assigned to the camera number button 1 to 9, 0 is assigned to the button 10.

step**1**-3. Input the same password to “Confirm Password” as entered in “Password.”

Input the same number in “Password” and “Confirm Password.” When the different password number is input, the password already input is cancelled and the setting returns to step 1-1.

It is not necessary to input the password for all the levels, 1 to 3. Input the password for the desired level only.

[for the disk management password]

step**2**-1. Input 4 digits of the password by pressing the numbers in the <Disk Management Password>.

step**2**-2. Input the same password to “Confirm Password” as entered in “Password.”

◆ Activating the PASSWORD LOCK

step**1.** Press the LOCK button while the MAIN switch is set to ON.
- The PASSWORD LOCK turns on and the LOCK indicator lights up.
- The PASSWORD LOCK locks the data only in the main device. The data in the copy device is not locked.
- The PASSWORD LOCK of the disk management password turns on after inputting the password and exits the setting screen.

◆ Releasing the PASSWORD LOCK

[for the levels 1 and 2]

step**1-1.** Press the LOCK button for more than 2 seconds to display the unlock password screen.

step**1-2.** Input the password of the desired level by pressing the number buttons.

PASSWORD LOCK can be unlocked even when the MAIN switch on the rear panel is set to ON and the POWER button on the front panel set to OFF.

When the password lock is turned on while the power of this unit is turned off, use the LCD display on the front panel to release the lock. In this case, input the password and then press the LOCK button.

step**1-3.** Select “Unlock.”
- The PASSWORD LOCK is released and the normal screen appears.

When the PASSWORD LOCK of levels 1 and 2 are set and then level 1 is unlocked, the PASSWORD LOCK of level 2 is still active.

When the PASSWORD LOCK of levels 1 and 2 are set, you cannot unlock only level 2. Unlock level 1 also.

Be sure to input the PASSWORD correctly. When you input the incorrect PASSWORD, the password already input is cancelled. Input the PASSWORD again.

Press the LOCK button when not releasing the lock.

[for the level 3]

step**2-1.** Press the “D (Next)” button while displaying the <User Menu> to proceeding to the next menu.
- The <Unlock Password Level 3> appears.

When the PASSWORD LOCK of levels 1, 2, and 3 are set, you cannot unlock only level 3. Unlock levels 1 and 2 first.

step**2-2.** Input the PASSWORD of level 3 by pressing the number buttons.

step**2-3.** Select “Unlock.”
- The PASSWORD LOCK is released and the <User Menu> appears.

When the PASSWORD LOCK of levels 1, 2, and 3 are set, the PASSWORD LOCK of level 2 is active when unlocking level 1, and level 3 is active when unlocking levels 1 and 2.

To exit the menu without releasing the lock, press the LOCK button while displaying the screen for unlocking.

[for the disk management password]

step**3-1.** In the <Main Storage Memory> (☞ page 79), select “Clear” of desired area and then select “Execute.”
- The <Unlock Password Disk Management> screen appears.

step**3-2.** Input the PASSWORD of disk management password by pressing the number buttons.

step**3-3.** Select “Unlock.”
- When exiting the <Main Storage Memory>, the lock of disk management password is turned on again.

If you forget the password, consult your dealer.

◆ Changing the PASSWORD

step**1.** Unlock the PASSWORD of levels 1 to 3.

[for the levels 1 to 3]

step**2-1.** Display the password setting screen of the level to be changed and then select “Clear.”

step**2-2.** Input the new PASSWORD referring to “Registering the PASSWORD.”

[for the disk management password]

step**3-1.** Select <Disk Management Password>.

step**3-2.** Input the PASSWORD of disk management password by pressing the number buttons.

step**3-3.** Select “Unlock.”
- The PASSWORD LOCK is released and the password setting screen appears.

step**3-4.** Select “Clear” to clear the password.

step**3-5.** Input the new PASSWORD referring to “Registering the PASSWORD.”

◆ Changing the lock mode from PASSWORD LOCK to SIMPLE LOCK

step**1.** Unlock the password of levels 1 to 3.

step**2.** Clear the registered password for all the levels, 1 to 3 and disk management password.

■ Multiplexer function related button operations/operation table

The multiplexer function of this unit allows the picture supplied from the camera to be displayed using split screens. It is also possible to set the position of the camera number to be displayed. (☞ See page 90 for basic operations of the multiplexer.)

♦ Camera number button operations

When pressing a camera number button, the picture supplied from the camera connected to that camera number terminal is displayed in a single screen. Even during split/sequential screen display, picture of any camera number can be displayed in a single screen by pressing the respective camera number button.

♦ SPLIT buttons operations

When pressing the SPLIT buttons, the split screen is displayed in the following order.

SPLIT4 (⊞) button : SPLIT 4a→SPLIT 4b→SPLIT 4c→SPLIT 4d→SPLIT 4a→• • •

SPLIT9 (▦) button : SPLIT 9a→SPLIT 9b→SPLIT 9a→• • •

SPLIT10 (▦) button : SPLIT 10a→SPLIT 10b→SPLIT 10a→• • •

SPLIT13 (▦) button : SPLIT 13a→SPLIT 13b→SPLIT 13a→• • •

SPLIT16 (▦) button : SPLIT 16 screen

♦ SEQUENCE button operations

When pressing the SEQUENCE button, the sequential display of the split or single display being displayed is started. Make the detailed settings of this display in the <Multiplexer Setting> (☞ page 64).

Available modes

"SPLIT 13 sequential," "SPLIT 10 sequential," "SPLIT 9 sequential," "SPLIT 4 sequential," "Single screen sequential"

Sequential display does not appear during playback.

The split screen setting can be set using "Split 4 screen," "Split 9 screen," "Split 10 screen," "Split 13 screen" or "Split 16 screen" in the <Output A Settings> and <Output B Settings> (☞ pages 64 and 65) respectively.

To cancel the sequential display

Press the SEQUENCE button again.

Displaying other type of split screen or pressing a camera number button (1 to 16) for displaying single screen also cancels the sequential display.

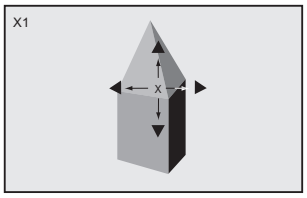
When a menu screen is displayed, the single or split screen display does not appear. In this case, clear the menu screen first and then press a camera number button (1 to 16) or SPLIT button.

♦ DIGITAL ZOOM button operations

By pressing the DIGITAL ZOOM button during single screen display, the displayed picture can be viewed at 100%, 200% or 400% magnification.

The magnification display function can be used only during single screen display. The center point moves vertically and horizontally by pressing the MOVE buttons.

step**1.** Press the DIGITAL ZOOM button during single screen display.
- "X1" appears on the top left of the single screen display and the magnification center point (X) appears.

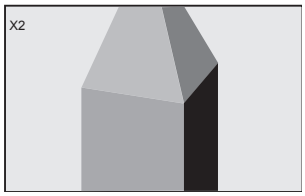


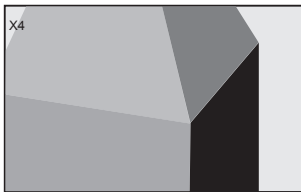
step**2.** To move the center point vertically or horizontally, press the ◀, ▶, ▲ and ▼ buttons.

The position of the magnification center point and the condition of the magnification screen are stored even when the display screen is switched or the power is turned off. This is useful when the point to magnify is determined in advance.

The condition of the magnification screen is reset when performing the triplex playback.

step**3.** Press the DIGITAL ZOOM button.
- Each time the button is pressed, the magnification percentage switches in the order of X2(200%), X4(400%), normal, and X1(100%).





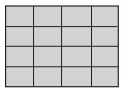
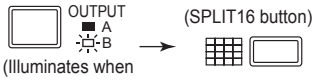
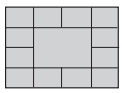
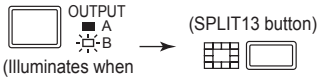
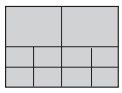
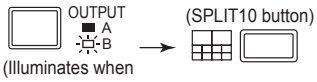
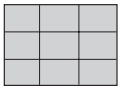
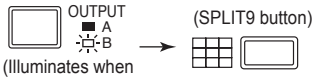
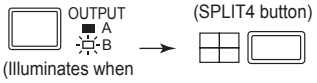
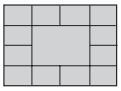
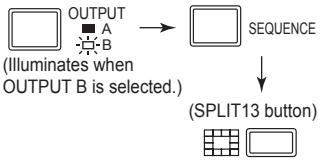
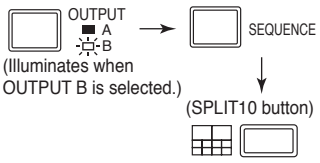
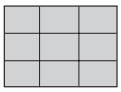
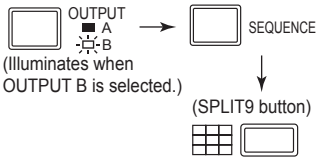
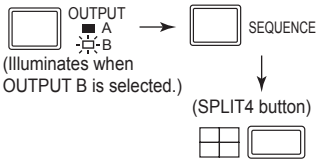
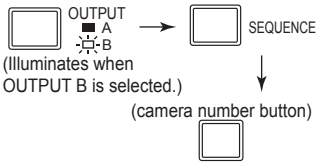
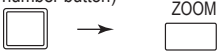
The magnification function can be used even during playback.

When playing back the picture recorded by multiple cameras in the single screen display, a black screen may appear when pausing playback and then display the magnified screen. In this case, display the magnified screen by turning the JOG dial to advance the picture frame by frame.

The magnification display function of this unit uses digital magnification and screen details may appear pixelized when magnifying.

♦ The function of the SPLIT, SEQUENCE, DIGITAL ZOOM, and camera number buttons

❗ The screen of the camera number without video signal input appears blue. Furthermore, the screen of the camera number set to “Off” in the <Covert Camera Setting> (☞ page 66) appears blue.

Display type	Button operation	Picture to be displayed and button illumination	Page
SPLIT16 	 (Illuminates when OUTPUT B is selected.)	The pictures supplied from the camera numbers selected in <Output A Settings> (<Output B Settings>) → <Split 16 screen>. The corresponding camera number button lights up.	64, 65
SPLIT13 (a) SPLIT13 (b) 	 (Illuminates when OUTPUT B is selected.)	The pictures supplied from the camera numbers selected in <Output A Settings> (<Output B Settings>) → <Split 13 screen>. The corresponding camera number button lights up.	64, 65
SPLIT10 (a) SPLIT10 (b) 	 (Illuminates when OUTPUT B is selected.)	The pictures supplied from the camera numbers selected in <Output A Settings> (<Output B Settings>) → <Split 10 screen>. The corresponding camera number button lights up.	64, 65
SPLIT9 (a) SPLIT9 (b) 	 (Illuminates when OUTPUT B is selected.)	The pictures supplied from the camera numbers selected in <Output A Settings> (<Output B Settings>) → <Split 9 screen>. The corresponding camera number button lights up.	64, 65
SPLIT4 (a) SPLIT4 (b) SPLIT4 (c) SPLIT4 (d)	 (Illuminates when OUTPUT B is selected.)	The pictures supplied from the camera numbers selected in <Output A Settings> (<Output B Settings>) → <Split 4 screen>. The corresponding camera number button lights up.	64, 65
SPLIT13 Sequential  2 types of SPLIT13 screens can be switched.	 (Illuminates when OUTPUT B is selected.)	2 types of SPLIT13 display set in <Output A Settings> (<Output B Settings>) → <Sequence Multi> are switched by the switching time set in <Sequence Time>. The corresponding camera number button lights up.	64, 65
SPLIT10 Sequential 2 types of SPLIT10 screens can be switched.	 (Illuminates when OUTPUT B is selected.)	2 types of SPLIT10 display set in <Output A Settings> (<Output B Settings>) → <Sequence Multi> are switched by the switching time set in <Sequence Time>. The corresponding camera number button lights up.	64, 65
SPLIT9 Sequential  2 types of SPLIT9 screens can be switched.	 (Illuminates when OUTPUT B is selected.)	2 types of SPLIT9 display set in <Output A Settings> (<Output B Settings>) → <Sequence Multi> are switched by the switching time set in <Sequence Time>. The corresponding camera number button lights up.	64, 65
SPLIT4 Sequential 4 types of SPLIT4 screens can be switched.	 (Illuminates when OUTPUT B is selected.)	4 types of SPLIT4 display set in <Output A Settings> (<Output B Settings>) → <Sequence Multi> are switched by the switching time set in <Sequence Time>. The corresponding camera number button lights up.	64, 65
Single screen Sequential Single screen displays can be switched.	 (Illuminates when OUTPUT B is selected.)	The single screen displays set in <Output A Settings> (<Output B Settings>) → <Sequence Single> are switched by the switching time set in <Sequence Time>. The corresponding camera number button lights up.	64, 65
Single screen display — Not enlarged		The single screen display of the selected camera number. The corresponding camera number button lights up.	62
Single screen display — Enlarged		The displayed camera picture in the single screen display enlarges by 200%, 400%, and then 100%. The camera number buttons 11, 14, 15, 16 light up.	62
During Alarm recording		When the alarm recording starts, the corresponding camera number or title flashes regardless of the screen type displayed.	–

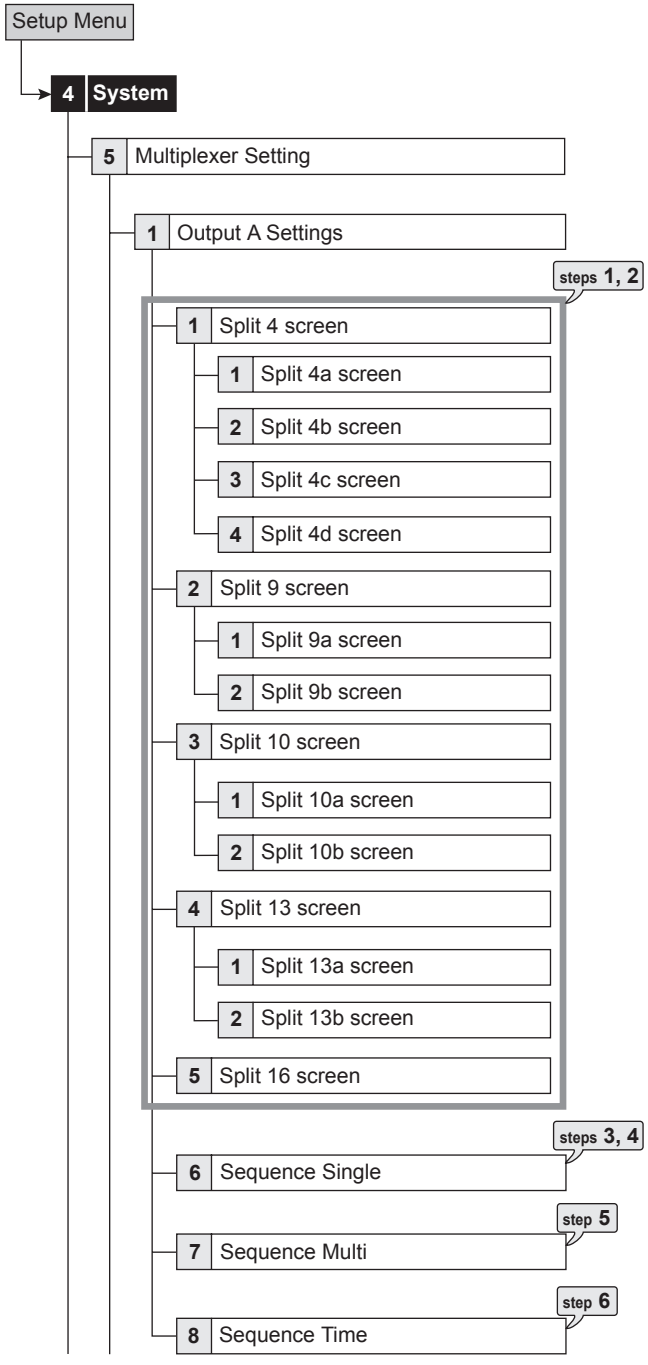
■ Multiplexer Setting

This menu is used to set the multiplexer setting of <Output A Settings> and <Output B Settings> respectively.

◆ Output A Settings

This item is used to set the camera number to be displayed in the split screen display on the monitor connected to OUTPUT A. And also used to set the sequential display settings and the switching time. Sequential display is the function to switch the selected displays automatically.

The selectable screen types are shown in the table on ☞ page 63.



[Split screen]

step**1.** When using front panel buttons, press the C or D button to select the display position to be set.

When using the mouse, left-click the number of the display position to be set.

- The number of the selected position is displayed in orange.

step**2.** When using front panel buttons, press the camera number button (1 to 16) of the desired camera number to be displayed.

- When not displaying the picture, press A button to display "– –."

When using the mouse, left-click the number until the desired camera number appears.

- The number (1 to 16) or "– –" is displayed.

❗ The same camera number cannot be set repeatedly in one split screen display.

❗ When you select "– –," "– –" displays for the camera number display on the normal screen.

[Single sequential screen <Sequence Single>]

step**3.** When using front panel buttons, press the C or D button to select the display position to be set.

When using the mouse, left-click the number of the display position to be set.

- The number of the selected position is displayed in orange.

step**4.** When using front panel buttons, press the camera number button (1 to 16) of the desired camera number to be displayed.

- When not displaying the picture, press A button to display "– –."

When using the mouse, left-click the number until the desired camera number appears.

- The number (1 to 16) or "– –" is displayed.

[Split sequential screen <Sequence Multi>]

step**5.** Select the displaying order of the screen type.

[<Sequence Time>]

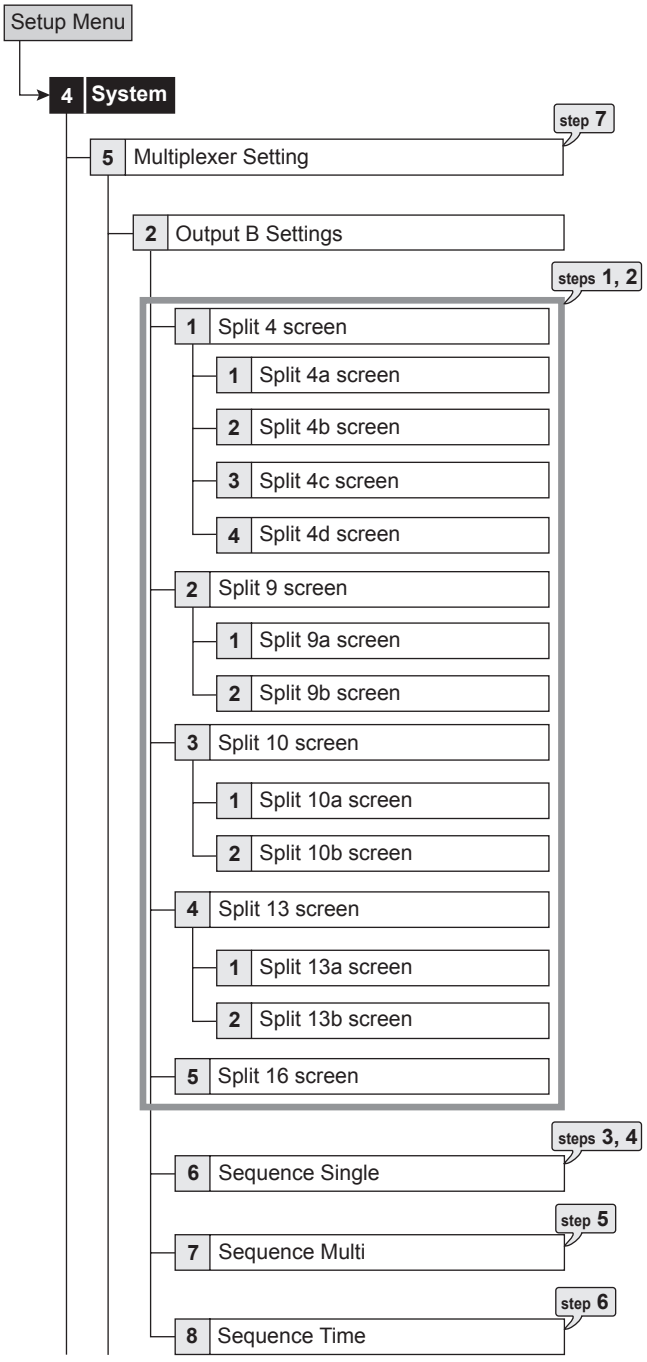
step**6.** Select the desired switching time.

❗ While sequential screen is displayed for either of output A or B, it is cancelled once when changing the settings of split screen and sequential screen.

♦ Output B Settings

This item is used to set the camera number to be displayed in the split screen display on the monitor connected to OUTPUT B. And also used to set the sequential display settings and the switching time. Sequential display is the function to switch the selected displays automatically.

The selectable screen types are shown in the table on ☞ page 63.



[Split screen]

step**1.** When using front panel buttons, press the C or D button to select the display position to be set.

When using the mouse, left-click the number of the display position to be set.

- The number of the selected position is displayed in orange.

step**2.** When using front panel buttons, press the camera number button (1 to 16) of the desired camera number to be displayed.

- When not displaying the picture, press A button to display "– –."

When using the mouse, left-click the number until the desired camera number appears.

- The number (1 to 16) or "– –" is displayed.

❗ The same camera number cannot be set repeatedly in one split screen display.

❗ When you select "– –," "– –" displays for the camera number display on the normal screen.

[Single sequential screen <Sequence Single>]

step**3.** When using front panel buttons, press the C or D button to select the display position to be set.

When using the mouse, left-click the number of the display position to be set.

- The number of the selected position is displayed in orange.

step**4.** When using front panel buttons, press the camera number button (1 to 16) of the desired camera number to be displayed.

- When not displaying the picture, press A button to display "– –."

When using the mouse, left-click the number until the desired camera number appears.

- The number (1 to 16) or "– –" is displayed.

[Split sequential screen <Sequence Multi>]

step**5.** Select the displaying order of the screen type.

[<Sequence Time>]

step**6.** Select the desired switching time.

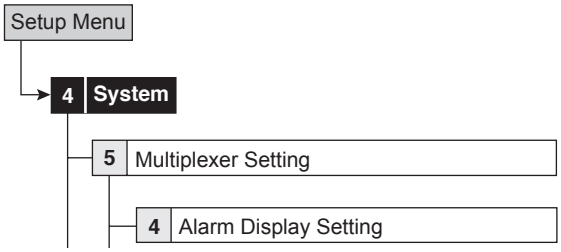
step**7.** When setting the output B settings to the same settings as those for the output A, select "Same as" and then select "Set."

❗ While sequential screen is displayed for either of output A or B, it is cancelled once when changing the settings of split screen and sequential screen.

◆ Alarm Display Setting

This item is used to switch the display to the picture input with alarm signal in the single screen display or split screen display which has been pre-set. When another alarm signal is input during alarm recording, the picture with the latest alarm signal appears in the single screen display or split screen display. The screen returns to its original display when the alarm recording is completed.

The alarm display setting is available for either output A or B. Select the desired output for alarm display. You cannot use alarm display on both output A and B at the same time.

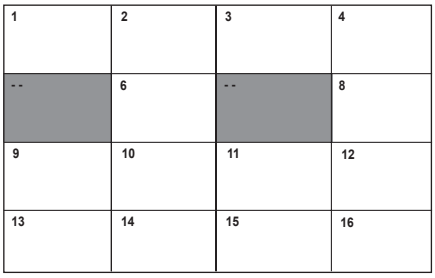


step1. Select output A or output B.
Off: Does not perform alarm display.

step2. Select the desired single screen display or split screen display which is set in the <Multiplexer Setting> to be displayed when the alarm signal is input for each sensor connected.

◆ Covert Camera Setting

This item is used to set the picture of the specified camera number not to be displayed regardless of the presence of video signals.

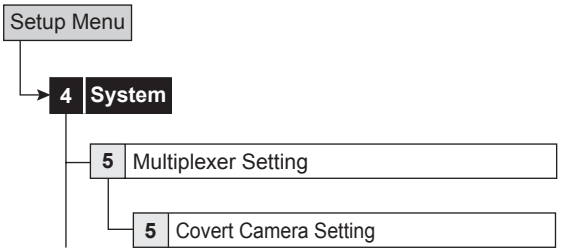


When the picture is interrupted due to the camera trouble, etc. while the <Covert Camera Setting> is set to “Off,” the warning message does not appear on the screen. And the buzzer does not sound even when “Warning” is set for “Buzzer” setting. The unit registers this error in the <System Log List>, however, the CALL OUT signal is not output.

When setting <Covert Camera Setting> to “Off” for a camera which is set for recording operation, recording is performed without displaying the picture on the screen.

When <Covert Camera Setting> is set to “Off,” the playback picture is not displayed and the screen turns blue for that camera number. To display the playback picture, switch the setting to “On.”

In alarm display setting function, single screen display is not displayed for the camera number of which covert camera setting is “Off.”

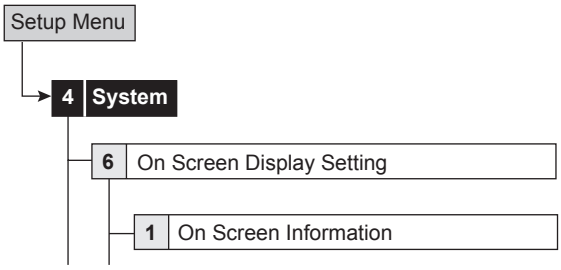


step1. Set the covert camera setting for each camera number.
On: Displays the picture supplied from the camera.
Off: Does not display the picture supplied from the camera and the screen of that camera turns blue.

■ On Screen Display Setting

♦ On Screen Information

This item is used to set the display mode and the location for the clock, triplex, and camera display on the monitor.



[Clock]

step**1.** Select the display mode of the clock.

Mode 1:

01-01-2006 Sun 00:00:00

Mode 2:

01-01-2006 Sun
00:00:00

Mode 3: Does not display the clock.

step**2.** Select the desired clock location.

[Triplex]

step**3.** Select the display mode of the remaining capacity and the operational conditions such as playback, recording, alarm recording, or emergency recording.
Mode 1: Displays the operational condition of the unit and the warning display.
Mode 2: Displays the remaining capacity of the specified device, the operational condition of the unit, and the warning display.
Mode 3: Displays the remaining capacity of the specified device, the operational condition of the unit, and the HDD being used for playback or recording. The warning display is not displayed.
Mode 4: Displays the warning display.
Mode 5: Displays nothing.

- The remaining capacity displayed is the capacity of the device specified in “Device” of “Low Memory Alarm Setting.” (☞ page 58)
- The remaining capacity is not displayed when the “Device” of “Low Memory Alarm Setting” is set to “Off.”

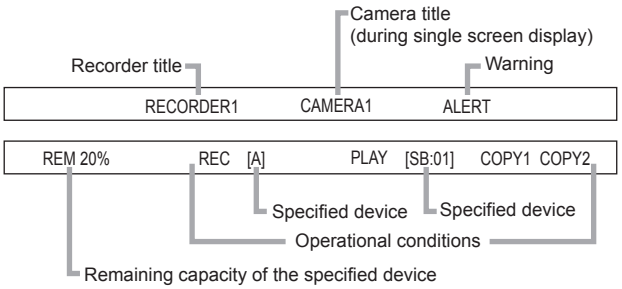
step**4.** Select the desired display location.

[Camera]

step**5.** Select the display mode of the camera information.
Number: Displays the camera number.
Title: Displays the title set in “Camera Title.” The title can be recorded along with the picture.
None: Displays nothing.

step**6.** Select the desired display location.
- When display mode is set to “Title,” title is displayed on the top when display location is set to “Top - Left” or “Top - Right,” and it is displayed on the bottom when display location is set to “Bottom - Left” or “Bottom - Right.”

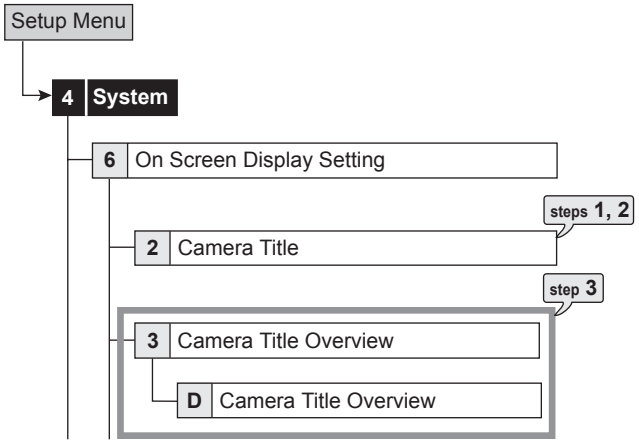
Display mode example



♦ Camera Title

This item is used to set the titles of each connected camera individually. When the display mode of the camera information is set to “Title,” the title, showing the location of the camera, appears on the screen for an easy-to-understand monitoring system.

- The camera titles can be input via a personal computer by using the Web function. (☞ page 101)
- Up to 16 characters can be used for the title.
- The number of characters displayed on the screen is:
  First 15 or all 16 for the split 16, 13, or 10 screen display (varies depending on the display position)
  All 16 for the split 4 or 9 screen display



step**1.** Set the camera number for which the camera title is set.

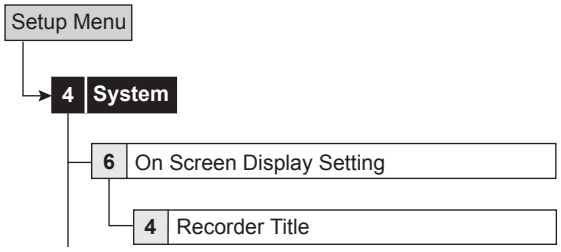
step**2.** Input the camera title by using the characters shown on the bottom of the screen.

step**3.** Display the preview screen to check the settings you have set.

◆ Recorder Title

This item is used to set the recorder title.

- The recorder title is displayed on the upper part of the operational mode display.
- The recorder title can be input via a personal computer by using the Web function. (☞ page 101)

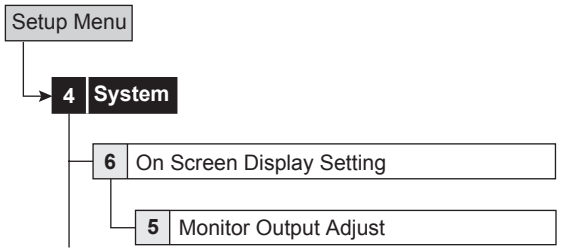


step1. Set the display mode of the recorder title.
On: Displays recorder title.
Off: Does not display the recorder title.

step2. Input the recorder title by using the characters shown on the bottom of the screen.
- When “ALERT” appears on the screen, press HELP button to display the detailed information.
☞ See page 108 for countermeasures.

◆ Monitor Output Adjust

This item is used to adjust the monitor output.



step1. Adjust the monitor scan mode.
- Adjust the display range of the monitor. Set it depending on the displaying area of the monitor.

Overscan: Displays overscaned picture. Generally, this setting is suitable for the monitor of which display range is narrow such as a television for domestic use.
Underscan: Displays underscaned picture. Generally, this setting is suitable for the monitor of which display range is wide such as a liquid crystal television. The black line may appear on the right or left side of the picture for each camera.

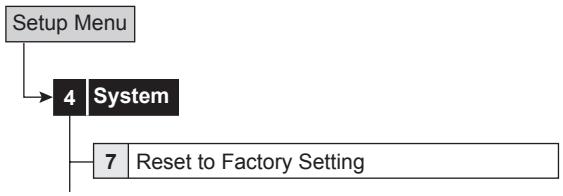
step2. Adjust the alpha blend level.
- The picture supplied from the camera can be viewed through the menu screen being displayed.

2-1 Menu
- Adjust the see-through level of the menu display. The degree of transparency becomes lower as the higher numbered level is set.

2-2 On Screen Information
- Adjust the see-through level of the information such as the clock or title. The degree of transparency becomes lower as the higher numbered level is set.

■ Reset to Factory Setting

This item is used to reset the menu settings.



step1. Select “Execute” to initialize menu settings.

- The setting of present time, password, user ID and password of communication, and HDD settings (partition setting) are not reset.
- When you execute <Reset to Factory Setting> with the setting of “IP Address,” “Sub Net Mask,” “Gateway,” “Service Port Setting” of LAN or menu language selection changed, the power turns off and the unit restarts.

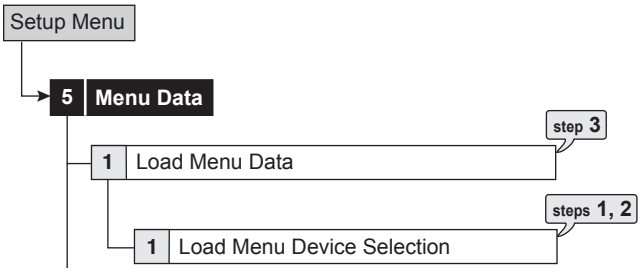
This menu is used to update and save the menu settings of this unit. This is done by loading the menu settings which is copied from another DX-TL4516E/DX-TL4516E(Z) via the external media such as USB memory, the DVD disc, or CD available for this unit.

- During loading or saving the menu data, other operations are not accepted.
- USB memory is usable only when the HDD is registered for main device.

■ Load Menu Data

This item is used to update the menu settings of this unit by loading the menu settings copied on the external media.

- To load or change the menu settings stored on the external media, set the HDD settings (partition setting) of this unit to the same settings as the recorder which has been used for copying the menu settings. When these settings are different between this unit and the recorder which has been used for copying, the menu settings cannot be updated.
- The menu setting cannot be updated by using the menu data of which the format is different. (For example, the construction of the menu has been changed due to the addition of the function, etc.)



step1. Select the device and the group to be used for loading the menu settings.

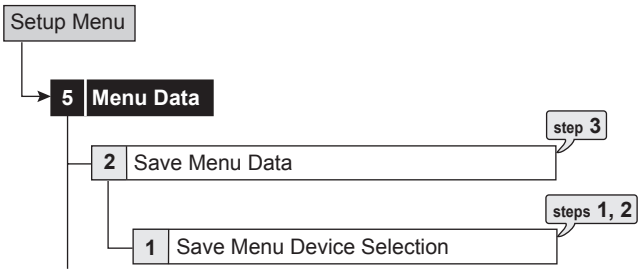
step2. Select “Eject” to eject the device.
- “Eject” appears only when the device selected on step 1 can be ejected.

step3. Select “Execute.”
- The menu settings of this unit is updated and “Menu settings data is loaded.” appears on the screen.
- When the medium to be used for loading the menu is not prepared, “Media does not exist.” appears on the screen.

- When loading the data with the setting of “IP Address,” “Sub Net Mask,” “Gateway,” “Service Port Setting” of LAN or menu language selection changed, the power turns off automatically. Then this unit restarts.
- The clock of the unit is not adjusted when the menu loading is completed. Adjust the time setting.
- Loading the menu data is available only while the unit is in stop mode (not in playback, recording, backup, communication, or sequential display).

■ Save Menu Data

This item is used to save the menu settings of this unit to the external device.



step1. Select the device and the group to be used for saving the menu settings of this unit.

step2. Select “Eject” to eject the device.
- “Eject” appears only when the device selected on step 1 can be ejected.

step3. Select “Execute.”
- The menu settings are saved to the external device.
- The menu can be saved even during playback or recording.
- When completing saving, “Menu settings data is saved.” appears on the screen.
- When the medium to be used for saving the menu is not prepared, “Media does not exist.” appears on the screen.

- Loading or saving the menu data may take a few seconds to start after selecting “Execute.”
- The menu items to be loaded or saved are marked with * on the check list on ☞ pages 110 to 125.

This menu is used to set the communication settings between this unit and the external device connected.

■ RS-232C Setting

This item is used to remotely control this unit via a PC connected to the RS-232C terminal.

step1. Select the communication mode.
Remote A: Controls this unit via a PC and this unit returns every status information.
Remote B: Controls this unit via a PC and this unit returns only the response to the command code.
Remote C: Controls this unit via a PC and this unit returns nothing.
Off: Does not control this unit via a PC.

step2. Set the port settings shown below.
- Transmission mode
- Data bit length
- Parity bit
- Stop bit length
- Delimiter

❗ Set all the settings to the same values as the PC connected.

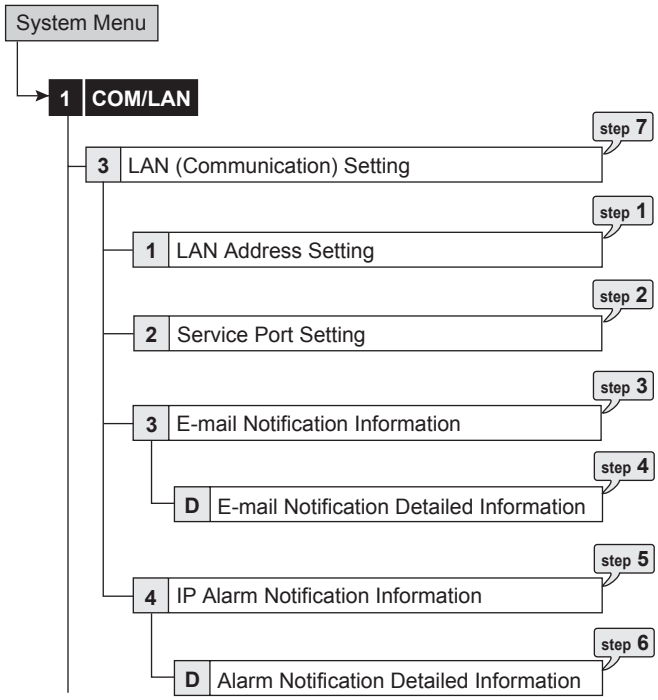
■ RS-485 Setting

This item is used to make the settings to use this unit with optional keyboard connected to RS-485 terminal.

step1. Select the recorder address.
Standalone: Does not use the optional keyboard with this unit.
Slave ID:01 to 16: Sets the ID number of this unit when using with optional keyboard.

■ LAN (Communication) Setting

This item is used to make the communication settings between this unit and the PC connected to LAN terminal.



[LAN Address Setting]

step**1.** Set the IP address, sub net mask, and Gateway.
- MAC address is shown on the bottom of the screen of <LAN (Communication) Setting>.

❗ Do not assign "000.000.000.000" to IP address and broadcast address. If this address is assigned, communications or any other functions of this unit may not be performed correctly.

❗ The setting cannot be changed during recording. Stop recording before changing the setting.

[Service Port Setting]

step**2.** Set the port setting of "Web," "User Access," and "Administrator."
- This item is used to set the port number which is necessary to connect with PC.
- Normally, leave the setting as is.

❗ Do not change the setting without sufficient knowledge about the network setting.

❗ When making the settings other than communication port settings of "Web," "User Access," and "Administrator," using the supplied application software, DX-PC55E, is required. Refer to the operation manual of the application software.

[E-mail Notification Information]

step**3.** Check the settings of "E-Mail Address" and "Recorder ID."
- When selecting "Mail," the e-mail is sent for the selected address.

❗ Using the web function of this unit is required to input "E-Mail Address" and "Recorder ID."

[E-mail Notification Detailed Information]

step**4.** Check the contents to be transmitted to the PC.
Remain: Transmits signal when the remaining capacity reaches the value set for Call out setting.
Temp/Fan: Transmits signal when the high temperature is detected or the fan is stopped.
Reboot: Transmits signal when the unit is rebooted.
Record: Transmits signal when the recording is started.
Alarm: Transmits signal when the alarm recording is started.
Sensor: Transmits signal when the signal is input to the terminal on the rear panel.

❗ Using the web function of this unit is required to change the contents to be transmitted.

[IP Alarm Notification Information]

step**5.** Check the settings of "IP Address" and "Target Port."
- This item is used to transmit warning signals or signals of status change such as a closure of a rear terminal to the PC connected.
- When selecting "Test," the sending test for the set IP address and port is executed.

❗ Using the supplied application software, DX-PC55E, is required to change the IP address and target port. Refer to the operation manual of the application software.

❗ Transmission of signal to broadcast address is not supported.

[Alarm Notification Detailed Information]

step**6.** Check the contents to be transmitted to the PC.
Remain: Transmits signal when the remaining capacity reaches the value set for Call out setting.
Temp/Fan: Transmits signal when the high temperature is detected or the fan is stopped.
Reboot: Transmits signal when the unit is rebooted.
Record: Transmits signal when the recording is started.
Alarm: Transmits signal when the alarm recording is started.
Sensor: Transmits signal when the signal is input to the terminal on the rear panel.

❗ Using the supplied application software, DX-PC55E, is required to change the contents to be transmitted. Refer to the operation manual of the application software.

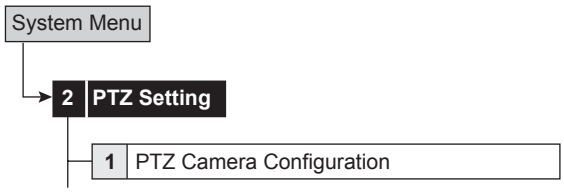
step**7.** Select "Return" in the screen of <LAN (Communication) Setting>.
- When the setting of "IP Address," "Sub Net Mask," "Gateway," or "Service Port Setting" is changed, the power turns off automatically and then the unit restarts.

PTZ Setting

This menu is used to make the settings for the cameras to be controlled.

■ PTZ Camera Configuration

This item is used to make the detailed settings for the cameras to be controlled.

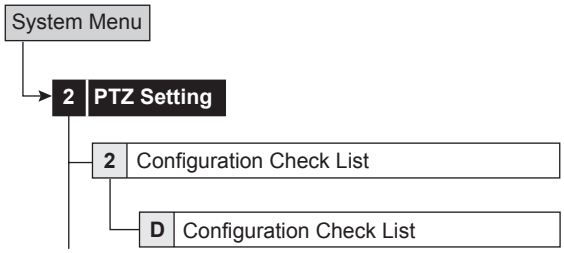


step**1.** Select the camera number to be set.

step**2.** Set the detailed settings for the camera number selected in step 1.
Device: Setting for the type of the camera or controller connected.
Port: Setting for the output terminal of the control signal. This item is automatically set depending on the input of the camera or the controller.
Device ID: Setting for the address of the camera to be controlled. Make the same settings as the camera or the controller.
Pan Reverse: Reverses the pan direction depending on the installation conditions.
Tilt Reverse: Reverses the tilt direction depending on the installation conditions.

■ Configuration Check List

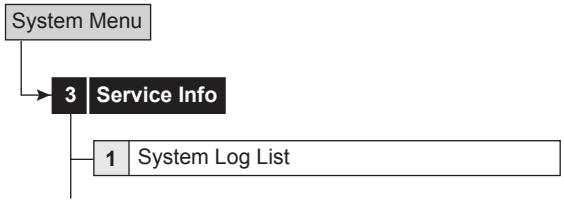
This item is used to check the connecting status of the camera or the controller, and the address and port set in <PTZ Camera Configuration>.



step**1.** Select <Configuration Check List> in the <PTZ Setting> menu.

■ System Log List

This item is used to check the number, date, and time of the system log.



step**1.** Check the system log in the <System Log List>.
- The <System Log List> displays up to 1000 items. When the number of items exceed this limit, the latest 1000 items are displayed.

When a failure occurs while the <System Log List> is being displayed, exit the screen and display it again. A new item is added to the list.

"REC ON" is registered to system log list when the recording is started, but it is not registered when the recording is resumed after a power failure.

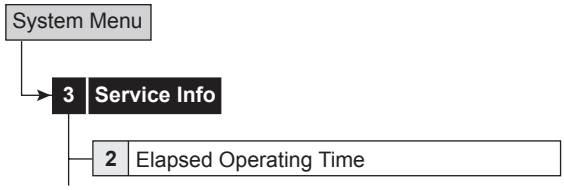
☞ See page 108 for the details of the listed log.

<Operational log>

Recording (front panel)	REC ON/REC OFF
Recording (rear panel)	REC EXT ON/ REC EXT OFF
Recording (communication)	REC COM ON/ REC COM OFF
Simple lock	PS-E
Password lock	PS-1, PS-2, PS-3
Cancelling lock	PS-OFF, PS-4
Displaying menu	MENU ON
Exiting menu	MENU OFF
Alarm recording disabled	ALM OFF
Alarm recording enabled	ALM ON
Power failure	P-LOSS
Reset	RESET
Communication	Name of log in user

■ Elapsed Operating Time

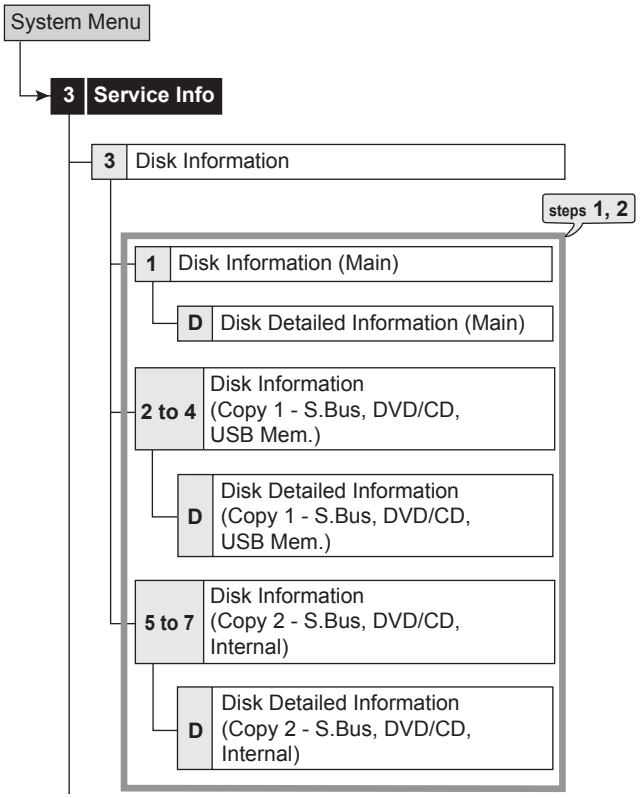
This item is used to check the total operating time of the system, copy 1, or copy 2 device.



step**1.** Check the total operating time in the <Elapsed Operating Time>.
"– – – – Hr": The device is not registered for that group.

■ Disk Information

This item is used to check the recording range of the main, copy 1 or copy 2 device.


System Menu
3 Service Info
3 Disk Information
steps 1, 2
1 Disk Information (Main)
D Disk Detailed Information (Main)
2 to 4 Disk Information (Copy 1 - S.Bus, DVD/CD, USB Mem.)
D Disk Detailed Information (Copy 1 - S.Bus, DVD/CD, USB Mem.)
5 to 7 Disk Information (Copy 2 - S.Bus, DVD/CD, Internal)
D Disk Detailed Information (Copy 2 - S.Bus, DVD/CD, Internal)

step**1.** Select "Information" of the desired device in the <Disk Information>.

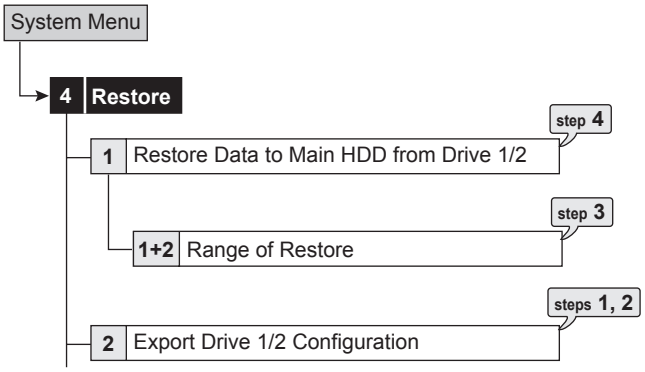
"Alarm Area" appears when "Alarm Recording Area" (☞ page 77 "Change Partition Setting") is set to other than "0 %."

"LPA Area" appears when "Long Pre-Alarm Area" (☞ page 77 "Change Partition Setting") is set to other than "0 %."

step**2.** Select "Detail" to check the detailed information of the device set for each area.
- When selecting "Detail," the information such as connection name, manufacturer, name, and size (GB unit) of the device are displayed.
- Before checking the latest information, display <Memory> menu during stopping recording, and check that the device is set correctly.

■ Restore Data to Main HDD from Drive 1/2/ Export Drive 1/2 Configuration

This item is used to restore the data from the copy device to the main device.



step**1.** Set the camera number to be restored.
- The button function changes between “All Off” and “All On” each time you select this button. You can switch on and off for all the cameras easily by using this button.

step**2.** Set the other detailed settings.
From Device: Sets the device which contains the data to be restored. The available setting items are “Copy 1” and “Copy 2.”
From Group: Sets the group which contains the data to be restored.
To Main: Sets the restore destination area. The available setting items are “Normal,” “Alarm,” and “LPA.”
Overwrite: Selects whether or not to overwrite the existing data.

“Alarm” appears for “To Main” when “Alarm Recording Area” (☞ page 77 “Change Partition Setting”) is set to other than “0 %.”

“LPA” appears for “To Main” when “Long Pre-Alarm Area” (☞ page 77 “Change Partition Setting”) is set to other than “0 %.”

step**3.** Set the start or start/end points of restoring.
Start: Sets only the start point of restoring.
Start/End: Sets the start and end points of restoring.
- To restore from the oldest data, select “Set Start Time.” To restore to the latest data, select “Set End Time.”

step**4.** Select “Execute.”
- Restoring starts.

Restore cannot be performed during recording, playback, or copying.

However, restore is available during following playback:
- playback the data of copy 1 device
- playback the data of copy 2 device
- restore destination is set to the area which is not being used for playback

Restore is stopped at the end point of main device regardless of the repeat recording setting of the main device to be restored.

To start restoring again, clear the warning display, and then delete the data or set “Overwrite” to “On.”

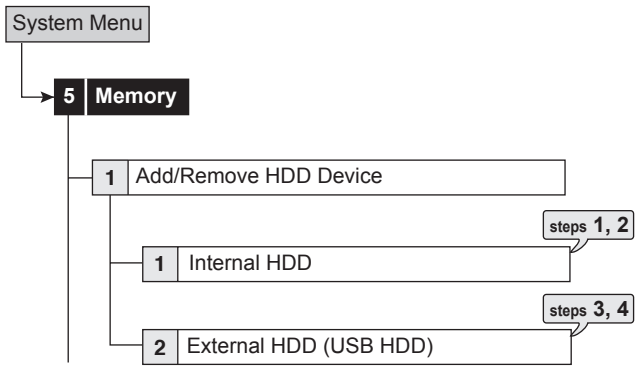
To start normal recording, clear the warning display first.

The picture data is processed in 2 MB unit. Therefore the data is restored in 2 MB unit from the start point of the designated range.

■ Add/Remove HDD Device

This item is used to set the HDDs for main or copy device.

- You cannot set this item during recording or playback.



[Internal HDD]

step**1.** Make sure that the internal HDDs connected are displayed in the screen of <Internal HDD>.
- Internal A and B indicate the internal device number.

step**2.** Add or remove the internal HDDs for setting the main device or copy 2 device.
Main: Registers for the main device. The numbers 01 and 02 indicate the recording order.
Copy2: Registers for the copy 2 device. The numbers indicate the order for writing of data. Do not set all the internal HDDs to copy 2 device.
Free: Does not registered as the main device.
- The button changes in the order of "Main," "Copy2," and "Free" each time you press the button.

[External HDD]

step**3.** Make sure that the USB HDDs connected to the SERIAL BUS port of this unit are displayed in the screen of <External HDD (USB HDD)>.
- When the "SB:" button of the desired ID number is pressed, the access LED on the device illuminates and you can check the corresponding HDD which is connected to the SERIAL BUS port.

step**4.** Add or remove the USB HDD for setting the main or copy device.
Main: Registers for the main device. The numbers indicate the recording order.
Copy1: Registers for the copy 1 device. The numbers indicate the order for writing of data.
Copy2: Registers for the copy 2 device. The numbers indicate the order for writing of data.
Free: Does not registered as the main or copy device.
- The button changes in the order of "Main," "Copy1," "Copy2," and "Free" each time you press the button.

- The available devices to be set as the copy 1 device are:
  HDD, DVD-R, DVD-RW, CD-R, CD-RW and USB memory.
  The available devices to be set as the copy 2 device are: HDD, DVD-RW, DVD-R, CD-R, and CD-RW.
- The copied data is transmitted in 2 MB units. The copy of up to 2 MB of the latest data may be delayed. Be careful when changing the copy device.
- The maximum number of devices connected to serial bus is 16 including the built-in DVD and USB memory. This is the total number of devices of main, copy 1, and copy 2.
- The order of the main device used for recording is: internal HDD → USB HDD.
- The maximum number of HDDs used as main device is 16 including internal HDD. (This is the total number of HDDs of internal and serial bus.)
- HDD used as copy 2 device is selected from either of internal and serial bus.
- The registered information may not be displayed correctly during operation such as recording or playback.
- USB memory is usable only when the HDD is registered for main device.

● **Notes for using the external device**

The various external HDDs can be connected to this unit in order to expand the memory or to use as the copy device, however, when you record or playback at high rate, the picture may be missed during recording or playback depending on the external device connected due to the delay of the data transfer rate or respond of the external device.

Check the operation before the actual operation.

Do not use the power control function of the external device which uses bus power of this unit.

● **Attaching the HDD and setting the ID number**

For connecting the HDD to the SERIAL BUS port on this unit, use the USB 2.0 cable. The ID number is not necessary to be set because the unit automatically recognizes the HDD attached.

Make sure that the MAIN switch on the rear panel is turned off before connecting the external HDDs.

● **The order of recording/playback when internal and external HDDs are registered as the main device**

The order of the internal HDD used for recording/playback is: internal A → internal B.

When all the internal HDD is used up, the HDD connected to SERIAL BUS port is used for recording/playback. The recording order is indicated next to the device name (“Main,” “Copy1,” or “Copy2”) in <External HDD (USB HDD)> (☞ page 75).

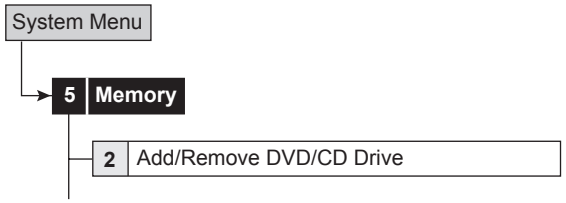
When all the serial bus HDD is used up, the internal HDD is used for recording/playback again.

In case of serial bus HDD, the HDD which is added latest is registered to the last number.

■ Add/Remove DVD/CD Drive

This item is used to set the DVD/CD drive for the DVD/CD group of the copy 1 or 2 device.

❗ You cannot set this item during recording or playback.



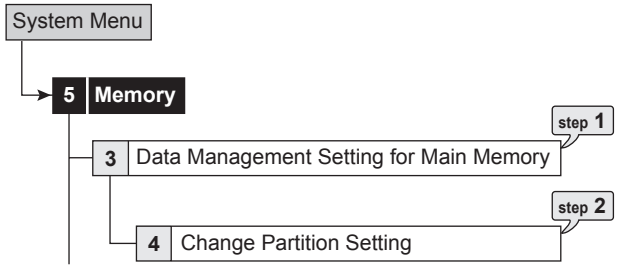
step**1.** Make sure that the DVD/CD drive connected is displayed in the <Add/Remove DVD/CD Drive>.
- When you select “Eject,” the access LED on the device illuminates and the disc tray opens.

step**2.** Select the desired device for DVD/CD drive.
Copy1: Registers for the copy 1 device.
Copy2: Registers for the copy 2 device.
- The button changes between “Copy1” and “Copy2” each time you press the button.

■ Data Management Setting for Main Memory

This item is used to set the operation of the unit when space of the main device becomes full during recording. And also used to set the partition of the main device.

- You cannot set this item during recording or playback.



[Main Device Settings]

step**1.** Select the desired repeat recording setting for each area.

Repeat On: Automatically returns to the beginning of the HDD and resumes recording (by overwriting the existing data).

Repeat Off: Stops recording at the end point of HDD. While “Triplex” in “On Screen Information” (☞ page 67) is set to the mode which displays the warning, recording resumes when the warning display is cleared.

When you set the mode which does not display warning, recording resumes when recording data is cleared or repeat recording is switched to “Repeat On.”

- “Repeat of Alarm Recording Area” can be set when “Alarm Recording Area” (☞ page 77 “Change Partition Setting”) is set to other than “0 %.”
- “Repeat of LPA Recording Area” can be set when “Long Pre-Alarm Area” (☞ page 77 “Change Partition Setting”) is set to other than “0 %.”
- The warning is displayed as “ALERT” on the screen. The last 16 warnings are stored, however, the warning occurred before them is reset and its display is cleared.
- In the LPA area, all the existed recording data is deleted and overwritten when the capacity becomes full. Be careful when you set the repeat recording setting to on.
- When repeat recording settings of alarm and LPA areas are set to “Repeat Off” and all of the respective areas are used up, the alarm or emergency recording stops. If an alarm or an emergency is input after that, respective recordings are not performed though the indicator flashes (the flash of inditator may not be seen). To restart recording, switch repeat recording setting to “Repeat On” or clear the recording data.

[Change Partition Setting]

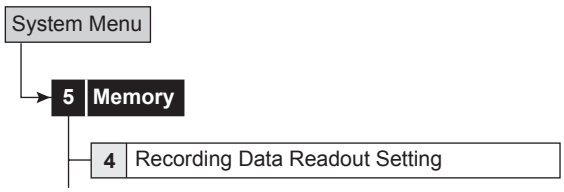
step**2.** Set the partition for the main device.

- Select the desired capacity for the alarm recording area and LPA area.
- When the alarm recording area is set to other than “0 %,” the HDD of the main device is partitioned so that the specified alarm recording area is used as the independent capacity for the alarm recording.
- ☞ See page 53 for the details of the long pre-alarm recording.

- The normal recording area is referred to as “normal area,” the alarm recording area (PARTITION area) is referred to as “alarm area,” and the long pre-alarm recording area is referred to as “LPA area.”
- When total value of the normal, alarm, and LPA areas reaches 100 %, the capacity is not increased.
- You cannot set “Normal Recording Area” to “0 %.”
- Playback, search, information display, remain setting, mode out setting, call out setting, and data clear function are performed independently for “normal area,” “alarm area,” and “LPA area.”
- The normal, alarm, or LPA area is selectable when copying the recorded data.
- In the case that “Alarm CH” is set, and an alarm signal is input during normal recording for the camera number which is not set for normal recording, pre-alarm recording may not be performed.

■ Recording Data Readout Setting

You cannot set this item during recording or playback.



[Playback Device Repeat Setting]
This item is used to playback the recorded contents of the device repeatedly.

step**1.** Select the desired repeat playback setting.
Repeat On: Automatically resumes playback from the beginning of the recording data when the data is played back to the end point of recording.
Repeat Off: Stops playback when the data is played back to the end point of recording.

[Image Originality Check Play]
This item is used to detect the recording data which is altered or is recorded by the other recorders. When such data is detected, “The recorder detected the data altered or data recorded by other recorder.” is displayed.

step**2.** Select the desired setting.
Active: Image originality check is performed during playback, and a warning is displayed at the point which is altered or is recorded by the other recorders.
Inactive: Image originality check is not performed.

step**3.** Playback the data of the device to be checked.
- Image originality check play is performed only for the picture of the camera which is being played back and displayed on the monitor connected to OUTPUT A. This function does not support OUTPUT B.
  When the picture is played back on the monitor for both of the OUTPUT A and B, the image originality check play is executed for not all the playback picture on OUTPUT A.

This function may cause problems during recording and playback. Normally, set this function to “Inactive.”

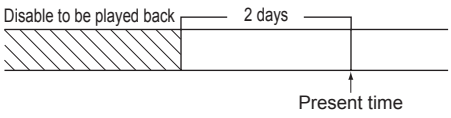
Warning is also displayed for parts where recorded data is damaged for some reason.

When performing complex playback operations with the SHUTTLE ring during alteration check, “The recorder detected the data altered or data recorded by other recorder.” warning may appear. Perform alteration check using normal playback or playback with changed playback intervals.

[Auto-Expire on Specified Date]
This item is used to disenable the data which is recorded before the specified time period to be played back in order to prevent keeping the data beyond the specified period.

step**4.** Select the desired time period.
- The data recorded before the set time period from the present time becomes disable to be played back. Only the data of specified time period by calculating back from the present time can be played back.

Example
When setting to "2 Day":

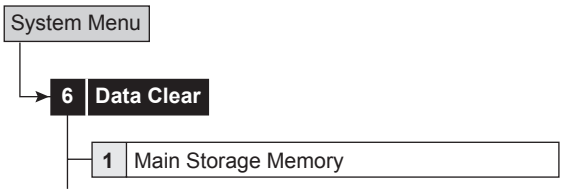


The available time period of the data to be played back is slightly longer than the set value because the picture is administrated in 2 MB unit.

■ Main Storage Memory

This item is used to delete the data of the normal area, alarm area, or LPA area in the main device.

- "Data in Alarm Area" can be set when "Alarm Recording Area" (☞ page 77 "Change Partition Setting") is set to other than "0 %."
- "Data in Long-Pre-Alarm Area" can be set when "Long Pre-Alarm Area" (☞ page 77 "Change Partition Setting") is set to other than "0 %."



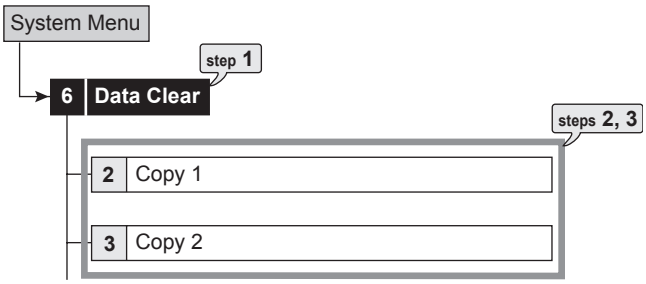
step**1.** Select "Clear" of the area which contains the data to be deleted.

step**2.** Select "Execute."
- "Data clear was completed." appears on the screen when completing the data clear.

- When disk management password has been registered and PASSWORD LOCK is turned on, and the main device data deletion is executed, the screen for unlock disk management appears. Unlock the PASSWORD LOCK first for deleting the data.
- Data cannot be deleted while accessing to the HDD such as playback/recording/copying/restoring.

■ Copy 1/Copy 2

This item is used to delete the data of each group in the copy 1 or copy 2 device.



step**1.** Select copy 1 or copy 2 device.

step**2.** Select "Clear" of the group which contains the data to be deleted.

step**3.** Select "Execute."
- "Data clear was completed." appears on the screen when completing the data clear.

- You can delete the data in the copy device even during data is being recorded in the main device.
- Deleting the data of the DVD takes about 30 or 40 minutes.

■ Various playback functions

♦ Playing still frames

This unit is equipped with the various playback functions using the JOG dial or SHUTTLE ring.

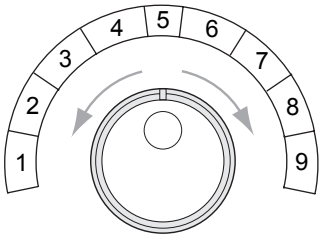
step**1.** Press the PAUSE button during playback.
- The unit switches to still frame playback. Press the button again to resume playback.
- If a camera number (1 to 16) button is pressed during still frame playback in the single screen display, the picture of that camera number is displayed.

When pressing the camera number button during still frame playback to display the single screen, the recorded picture may not be existed at that point or picture may not be displayed depending on the selected camera number or timing of displaying the still frame playback picture.

♦ Shuttle viewing/direct shuttle viewing

The playback speed can be changed by turning the SHUTTLE ring during playback, reverse playback, or still frame playback.

step**1.** Turn the SHUTTLE ring during playback or reverse playback (direct shuttle viewing), or during still frame playback (shuttle viewing).
- The playback speed depends on the angle of the SHUTTLE ring turned.
- When letting go of the SHUTTLE ring, the ring returns to the center and the unit returns to still frame playback.



1 High-speed rewind
2 Reverse speed search (30 MB units)
3 Reverse speed search (fourfold speed)
4 Reverse speed search (double speed)
5 Still frame playback
6 Forward speed search (double speed)
7 Forward speed search (fourfold speed)
8 Forward speed search (30 MB units)
9 High-speed fast forward

♦ Shuttle hold

The playback speed can be maintained even when letting go of the SHUTTLE ring during shuttle viewing.

step**1.** Press the PAUSE button while holding the SHUTTLE ring in the angle for the desired playback speed.

step**2.** Let go of the SHUTTLE ring.
- The playback speed is maintained.
- To cancel shuttle hold, press the PAUSE button. The unit switches to still frame playback.

♦ Frame-by-frame playback

step**1.** Turn the JOG dial during still frame playback.
- Clockwise: Activates frame-by-frame playback in the forward direction.
- Counterclockwise: Activates frame-by-frame playback in the reverse direction.
- Keep turning clockwise: Activates continuous frame-by-frame playback in the forward direction.
- Keep turning counterclockwise: Activates continuous frame-by-frame playback in the reverse direction.
- When turning of JOG dial is stopped: Resumes still frame playback.

During frame-by-frame playback in the single screen display, the frame feeding may not operate correctly when the JOG dial is turned too fast because this operation is performed while searching the picture of the displaying camera number.

♦ Reverse playback

step**1.** Press the REV. PLAY (REVERSE PLAYBACK) button while the unit is in stop mode.
- Playback in the reverse direction starts. To stop reverse playback, press the STOP button.

For the picture recorded in frame recording, the reverse playback is performed in field playback (plays back one of two fields of the picture).

When the reverse playback is started for the first time after turning the power on, the latest recording picture is played back.

♦ High-speed fast-forward/high-speed rewind

step**1.** Turn the SHUTTLE ring and keep the desired angle for more than 1 second while playback is stopped.
- Clockwise for more than 1 second: Activates High-speed fast-forward playback.
- Counterclockwise for more than 1 second: Activates High-speed rewind playback.
- Press the STOP button: Stops playback.

♦ Changing playback intervals

Although, playback and reverse playback use the same interval as that for recording, it is possible to change the playback interval. This function is useful for slow-motion playback of fast-moving footage, or quick playback of extensive footage without skipping frames.

step**1-1.** (To playback the picture recorded at low recording rate fast:)

Press the + button during playback or reverse playback.
- Playback or reverse playback is made at a speed of 100 pps in total.

step**1-2.** (To slow down the playback speed:)

Press the – button.
- Each time the – button is pressed, the playback speed becomes slower (up to 0.125 pps).

step**2-1.** (To playback the recording data of the fast motion slowly:)

Press the – button during playback or reverse playback.
- Playback or reverse playback is made at a speed of 0.125 pps per camera.

step**2-2.** (To increase the playback speed:)

Press the + button.
- Each time the + button is pressed, the playback speed becomes faster (up to 100 pps). (For the picture recorded at the pps of more than 100, the playback speed may become slower when you press the + button.)

❗ Audio cannot be played back when changing the playback interval.

❗ Once the playback interval is changed, audio is not played back even when the playback interval is returned to the original value. To playback audio, stop playback once and then playback the picture again.

❗ Altering the playback interval of data with low recording rate to perform a quick playback may cause discrepancies between actual recording time and the recording time displayed on the screen.

♦ Simultaneous playback during recording

The recording data can be played back simultaneously during recording.

❗ The playback picture may pause temporarily or the audio may be interrupted.

❗ Noise may appear on the picture during shuttle playback.

➡ Split screen display can be selected individually for recording and playback.

♦ Playback the latest recorded contents

step**1.** Press the PAUSE (JUMP TO END) button when the unit is in stop mode.
- The still frame playback picture around the end point of the latest recording is displayed. The time lag between the latest recording point and displayed point varies depending on the recording rate that has been used at the time of recording.

➡ In LPA area, this function does not work. For the data in LPA area, the data which is recorded at the closest point to the HDD end point is played back.

♦ Triplex playback

This function is used to insert the playback picture of the desired camera number while displaying the picture supplied from the cameras.

step**1.** Press the TRIPLEX PB button during split screen display.
- The unit switches to triplex playback mode.

step**2.** Within 3 seconds from step 1 operation, press the desired camera number button to be played back.
- The playback picture of the selected camera number appears.
- To switch the camera number of the playback picture, stop playback once and then follow the steps 1 and 2 above.

step**3**. Press the STOP button to stop playback.

❗ Triplex playback is available for either OUTPUT A or B.

❗ When the camera number button is not pressed for more than 3 seconds after pressing the TRIPLEX PB button, the triplex playback mode is cancelled.

❗ The picture of the camera number which is not displayed in the split screen display cannot be played back. In this case, the triplex playback mode is cancelled.

❗ Triplex playback mode is cancelled when the button other than camera number button is pressed.

❗ Triplex playback mode is cancelled when the different type of split screen is displayed. (The triplex playback mode is not cancelled when the newly displayed split screen contains the camera number of which picture is being played back.)

❗ Triplex playback mode cannot be used during alarm display function is performed. When the alarm display is performed during triplex playback, triplex playback is cancelled and the normal camera picture appears when the alarm display is finished.

❗ The blue screen appears when the data of the selected camera number is not existed in the triplex playback picture.

❗ The clock which is displayed during triplex playback indicates the time and date of the playback picture.

■ Registering the picture

This function is used to register a bookmark or to copy the picture being displayed using the BOOK MARK button.

◆ Registering a bookmark

step**1.** Press the PAUSE button during playback in the single screen display.
- The unit switches to still frame playback of the single screen display.

step**2.** Press the BOOK MARK button on the front panel.

step**3.** Select “Enter” of “Register Bookmark” in the selection screen.

step**4** Press the desired bookmark number (1 to 8).
- For example, when pressing number 1, book mark 1 is registered.
- Bookmarks can be memorized in main device (normal and alarm areas) only. When the main device is partitioned, up to 8 bookmarks can be memorized for normal and alarm areas respectively.

- BOOK MARK button does not work during split screen display.
- The same position can be registered repeatedly with the different bookmark number.
- The registered bookmark can be overwritten, but cannot be deleted.
- When the data of which the bookmark is registered is overwritten with the new data, the bookmark is deleted, however, the display in the bookmark list is not deleted.

◆ Picture copy

step**1.** Follow the steps 1 and 2 on “Registering a bookmark” above.

step**2**. Select “Copy” of “Copy data to DVD/CD drive.” or “Copy data to Memory Disk.”
- The picture is copied.

- Only the screens of odd are copied when you copy the frame recording picture.
- When playing back the copied data on the personal computer:

  The data copied using picture copy function can be played back only on the personal computer. By using the personal computer which is equipped with the system requirements described on ☞ page 44, double click the program file in the “P_REC” folder in the medium which has been used for copying.

■ Functions of the unit in case of power failure

♦ Power failure compensation circuit

The unit is equipped with an internalized power failure compensation circuit. When the unit has been charged for 48 hours (full), the date, time, timer record settings, and menu settings are kept up to 1 month without power. The accuracy of the time declines if the power plug is not connected to the wall outlet for and extensive period. In this case, it is recommended to check the present time setting.

♦ Power failure reset recording

If there is a power failure during recording, the recording resumes after the power is restored. If there is a power failure during timer recording, the recording resumes after the power is restored when the present time is within the set time period of the timer. For alarm recording, recording will stop even the present time is within the set recording time.

- When the power failure occurs during recording, the recorded data may be damaged or playback of data may become impossible.
- When the power failure occurs during recording, the picture and audio of up to 6 MB just before the power failure are not recorded. When the pre-alarm recording time is set to other than 0 second, picture and audio of up to 32 MB are not recorded.
- When the power failure occurs during alarm or emergency recording, alarm or emergency recording is cancelled after the power is restored.
- “REC ON” is registered in the system log list when the recording is started, but it is not registered when the recording is resumed after a power failure.
- The playback picture at the start position where recording is resumed after a power failure may be disturbed and the search function may not operate properly for that position.

♦ Log function when power failure occurs while the unit is in operation or the MAIN switch on the rear of the unit is turned OFF

In the event of power failure or if the MAIN switch on the rear of the unit is turned OFF when the power is supplied, up to 1000 items (including the time of failure and warning log displays as well as other items) are saved in the <System Log List>. (☞ page 73)

■ RESET button

When you press the RESET button on the rear panel with a ballpoint pen, etc., the microcomputer of this unit is reset and the power turns off.

- The menu settings, the present time and picture data are kept even when the unit is reset.

Operation examples

■ Operation example 1

Specifying the recording period and performing continuous repeat recording.

For loading of a picture supplied from the camera, ☞ see “Relation of recording operation to the number of cameras and recording rate settings” on page 126.

◆ Operation

- Continues recording for 24 hours and repeats recording on a one-month (30-day) cycle.
- Makes the backup of the data simultaneously during recording.

◆ Settings

Menu	Settings	Pages
[Recording settings] Setup Menu 1 Recording 1 Set Recording Pattern A (Normal/Timer) step 1 1 Camera Check step 2 2+D Recording Setting A-Normal(Auto)	step1. Execute camera check to automatically detect the cameras with video signal input. step2. Use “Auto” to set “30 Day” and “24 hours” for “Recording cycle” and “Recording time per day” respectively.	49-51
[Copy device settings] System Menu 5 Memory 1 Add/Remove HDD Device step 3 2 External HDD (USB HDD)	step3. Register the multiple HDDs for SerialBus group of Copy 2.	75
[Backup settings] User Menu 2 Copy steps 5, 6 2 Copy Data to Copy 2 Drive step 4 4 Set Copy 2 Drive	step4. Set “To Copy 2” to “SerialBus,” “FIFO Overwrite” to “On,” and “Overwrite” to “Off.” step5. Set “Range of Copy” to “Continue.” step6. Select “Execute.”	42

When setting the total capacity of the copy 2 device (registering the device) to larger than that of the main device, all the recorded data of the main device can be copied to the copy 2 device. In this operation example, the recorded data of more than one month in the main device can be stored to the copy 2 device. You can prevent the accidental erasure of the recorded data caused by the crash of the main device.

■ Operation example 2

Setting the areas for normal and alarm recordings individually.

♦ Operation

- Performs alarm recording at the specified recording rate.
- Performs repeat normal recording at the specified recording rate.
- Records the data of normal and alarm recordings to the different areas in order to store the alarm recording data for long term.

♦ Settings

Menu	Settings	Pages
[Alarm area settings, Repeat recording settings] System Menu 5 Memory step 2 — 3 Data Management Setting for Main Memory step 1 — 4 Change Partition Setting	step1. Set the normal and alarm recording areas. step2. Set the repeat recording setting of normal recording area to "Repeat On" and alarm recording area to "Repeat Off."	77 77
[Recording settings] Setup Menu 1 Recording 1 Set Recording Pattern A (Normal/Timer) step 3 — 1 Camera Check step 4 — 2+D Recording Setting A-Normal(Easy) step 5 — 3 Alarm Recording Menu step 6 — 1+D Recording Setting A-Alarm(Easy) step 7 — 5 Alarm Trigger In/Out	step3. Execute camera check to automatically detect the cameras with video signal input. step4. Use "Easy" to set the desired recording rate for normal recording. step5. Set the alarm mode to "Alarm CH." step6. Use "Easy" to set the desired recording rate for alarm recording. step7. Set the alarm recording trigger to "External."	49-51

♦ A measuring for setting the partition capacity

Refer to the example below when calculating the alarm recording area capacity.

(Example:)

Alarm recording time is set to 15 seconds.
The number of alarm recordings is 80 times per day.
Alarm recording data is stored for 3 months.
Picture grade for alarm recording is set to “L6-34KB” (34 kbytes), recording rate is set to “25 pps.”

1) While the partition function is set to off (alarm area is set to 0%), the estimated recordable time is 78 hours when operating with one camera at the recording rate of “25 pps” and at the picture grade of “L6-34KB.” (Set the normal recording rate using “Manual,” and check the estimated recording time in the overview screen.)
2) The alarm recording time per day is:
   15 seconds multiplied by 80 times makes 1200 seconds (20 minutes).
3) The alarm recording time per month is:
   20 minutes multiplied by 30 days makes 600 minutes (10 hours).
4) As the estimated recordable time is 78 hours;
   Divide 10 hours by 78 hours makes 12.8 %.
5) Alarm area capacity is 20 % with some spare capacity.

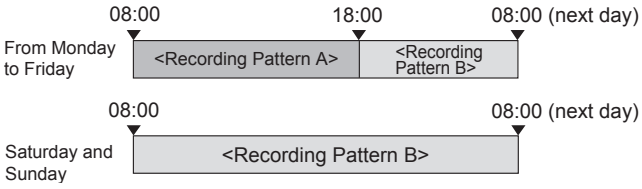
❗ This example shows the reference when the alarm mode is set to “Alarm CH.” Adjust the partition capacity after the actual operation.

■ Operation example 3

Switching the number of the cameras operated and recording rate depending on the time period and day of the week.

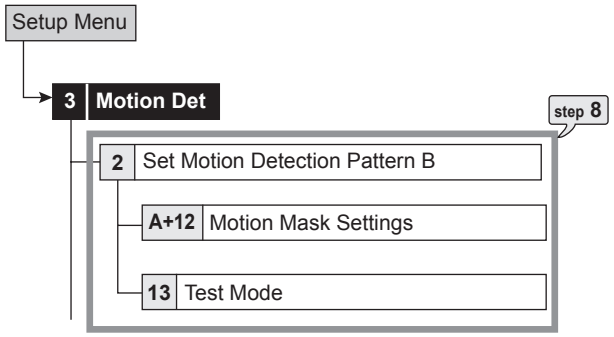
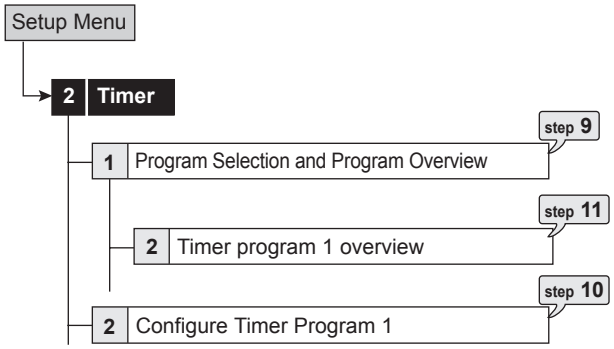
◆ Operation

- Uses <Set Recording Pattern A (Normal/Timer)> from 08:00 to 18:00 on Monday to Friday.
- Uses <Set Recording Pattern B (Timer)> from 18:00 to 08:00 (on the following day) (alarm recording operation : motion detection B) on Monday to Friday.
- Uses <Set Recording Pattern B (Timer)> from 08:00 to 08:00 (on the following day) on Saturday and Sunday.



◆ Settings

Menu	Settings	Pages
[Recording settings A] Setup Menu 1 **Recording** 1 Set Recording Pattern A (Normal/Timer) step 1 — 1 Camera Check step 2 — 2+D Recording Setting A-Normal(Easy) step 3 — 2+D Recording Setting A-Normal(Manual)	**step1.** Execute camera check to automatically detect the cameras with video signal input. **step2.** Use "Easy" to set the desired recording rate for normal recording. **step3.** Use "Manual" to set the recording rate of unnecessary cameras to "- - -."	49-51
[Recording settings B] Setup Menu 1 **Recording** 2 Set Recording Pattern B (Timer) step 4 — 1 Camera Check step 6 — 2+D Recording Setting B-Normal(Easy) 3 Alarm Recording Menu step 5 — 1+D Recording Setting B-Alarm(Easy) step 7 — 5 Alarm Trigger In/Out	**step4.** Execute camera check to automatically detect the cameras with video signal input. **step5.** Use "Easy" to set the desired recording rate for alarm recording. **step6.** Use "Easy" to set the recording rate of all the camera numbers for normal recording to "- - -." **step7.** Set the alarm recording trigger to "MD-B."	49-51

<table>
<tr><th>Menu</th><th>Settings</th><th>Pages</th></tr>
<tr><td>[Motion detection settings]
 
</td><td>step8. Set the motion detection settings for Motion B.</td><td>56, 57</td></tr>
<tr><td>[Timer settings]
 

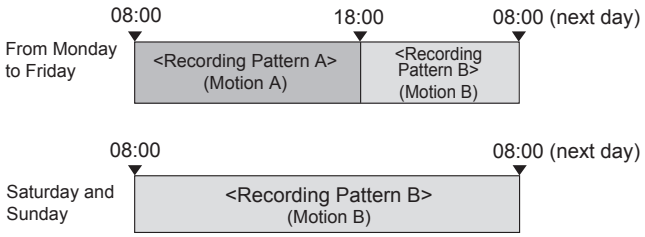
<table>
<tr><th></th><th>Day of The Week</th><th>Time</th><th>Program Mode</th><th>Motion Detection</th><th>Special Day</th></tr>
<tr><td>Line 1</td><td>Special</td><td>08:00-18:00</td><td>Record A</td><td>Inactive</td><td rowspan="4">Monday - Friday</td></tr>
<tr><td>Line 2</td><td>Special</td><td>18:00-08:00</td><td>Record B</td><td>Active</td></tr>
<tr><td>Line 3</td><td>Saturday</td><td>08:00-08:00</td><td>Record B</td><td>Active</td></tr>
<tr><td>Line 4</td><td>Sunday</td><td>08:00-08:00</td><td>Record B</td><td>Active</td></tr>
</table></td><td>step9. Set the timer program number to “Program 1.”
step10. Set the detailed timer recording settings as the table below.
step11. Check the timer recording settings and recordable time (recordable days) in the overview screen.</td><td>54, 55</td></tr>
<tr><td></td><td>step12. Exit the menu screen.
step13. Press the TIMER button on the front panel.</td><td>-</td></tr>
</table>

■ Operation example 4

Switching the number of the cameras operated and recording rate depending on the time period and day of the week. Also switching the motion detection condition depending on the time period (daytime and night) or day of the week.

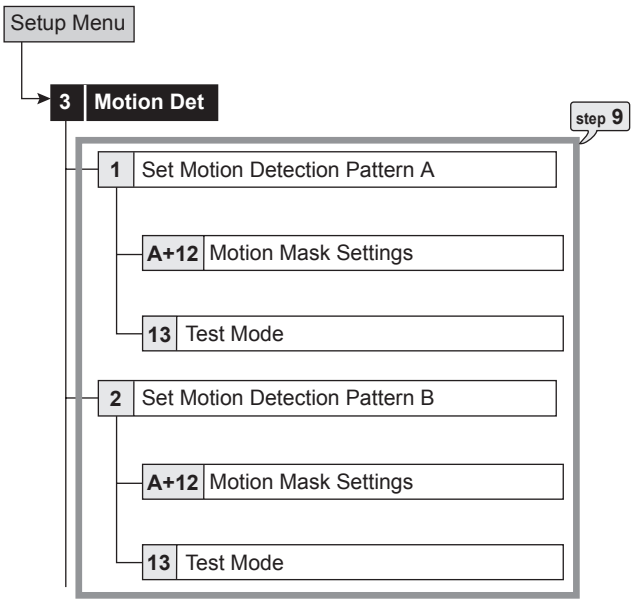
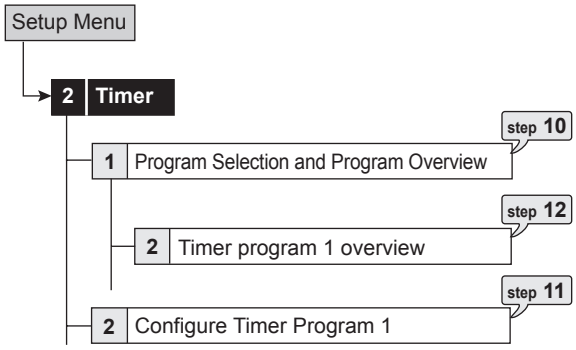
◆ Operation

- Uses <Set Recording Pattern A (Normal/Timer)> (alarm recording operation: Motion detection A) from 08:00 to 18:00 on Monday to Friday.
- Uses <Set Recording Pattern B (Timer)> (on the following day) (alarm recording operation: Motion detection B) from 18:00 to 08:00 on Monday to Friday.
- Uses <Set Recording Pattern B (Timer)> from 08:00 to 08:00 (on the following day) on Saturday and Sunday.



◆ Settings

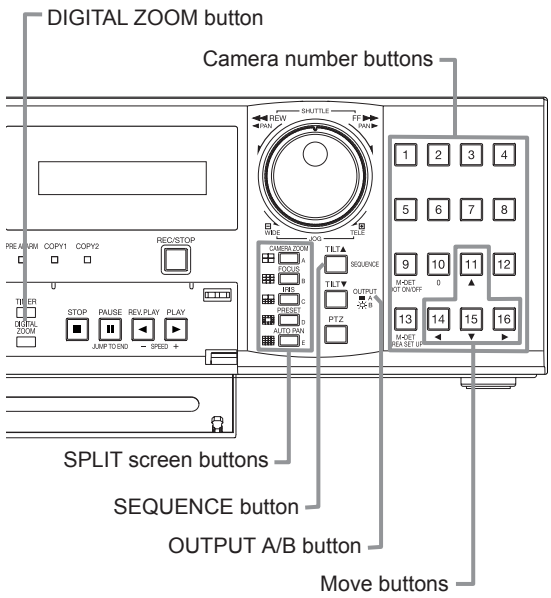
Menu	Settings	Pages
[Recording settings A] Setup Menu 1 Recording 1 Set Recording Pattern A (Normal/Timer) step 1 — 1 Camera Check step 2 — 2+D Recording Setting A-Normal(Easy) 3 Alarm Recording Menu step 3 — 1+D Recording Setting A-Alarm(Easy) step 4 — 5 Alarm Trigger In/Out	step1. Execute camera check to automatically detect the cameras with video signal input. step2. Use "Easy" to set the desired recording rate for normal recording. step3. Use "Easy" to set the desired recording rate for alarm recording. step4. Set the alarm recording trigger to "MD-A."	49-51
[Recording settings B] Setup Menu 1 Recording 2 Set Recording Pattern B (Timer) step 5 — 1 Camera Check step 6 — 2+D Recording Setting B-Normal(Easy) 3 Alarm Recording Menu step 7 — 1+D Recording Setting B-Alarm(Easy) step 8 — 5 Alarm Trigger In/Out	step5. Execute camera check to automatically detect the cameras with video signal input. step6. Use "Easy" to set the desired recording rate for normal recording. step7. Use "Easy" to set the desired recording rate for alarm recording. step8. Set the alarm recording trigger to "MD-B."	49-51

Menu	Settings	Pages
[Motion detection settings] 	**step9.** Set the motion detection settings for Motion A and Motion B.	56, 57
[Timer settings] 	**step10.** Set the timer program number to “Program 1.” **step11.** Set the detailed timer recording settings as the table below. **step12.** Check the timer recording settings and recordable time (recordable days) in the overview screen.	54, 55
	step13. Exit the menu screen. **step14.** Press the TIMER button on the front panel.	-

	Day of The Week	Time	Program Mode	Motion Detection	Special Day
Line 1	Special	08:00-18:00	Record A	Active	Monday - Friday
Line 2	Special	18:00-08:00	Record B	Active	
Line 3	Saturday	08:00-08:00	Record B	Active	
Line 4	Sunday	08:00-08:00	Record B	Active	

■ Basic multiplexer functions

This function is used to activate multiplexer functions using the buttons on the front panel.



◆ Multiplexer buttons

1. Camera number buttons (1 to 16)

Displays the picture supplied from the cameras connected to CAMERA IN terminals 1 to 16 on the rear panel in the single screen display.

Pictures can be displayed even if the camera is not set to record.

2. SPLIT screen buttons

Each time the button is pressed, displays the split screen in the following order.

SPLIT4 (⊞) button : SPLIT 4a→SPLIT 4b→ SPLIT 4c→SPLIT 4d→SPLIT 4a →• • •

SPLIT9 (▦) button : SPLIT 9a→SPLIT 9b→ SPLIT 9a→• • •

SPLIT10 (▦) button : SPLIT 10a→SPLIT 10b→ SPLIT 10a→• • •

SPLIT13 (▦) button : SPLIT 13a→SPLIT 13b→ SPLIT 13a→• • •

SPLIT16 (▦) button : SPLIT 16 screen

3. SEQUENCE button

Displays the sequential screen in the split screen or the single screen display. Make the detailed settings of this display in the <Multiplexer Setting> (☞ page 64). Sequential display does not appear during playback.

The sequential display is cancelled when you press the SEQUENCE button again or display a different type of split screen or single screen.

Pressing the OUTPUT A/B button on the front panel switches the multiplexer video output. When OUTPUT A is selected, the button light indicator is off. When OUTPUT B is selected, the button light indicator is on, and camera number buttons, SPLIT screen buttons, and SEQUENCE button are operated for the monitor screen connected to the OUTPUT B connector. Pressing the OUTPUT A/B button again switches the multiplexer output to OUTPUT A.

4. DIGITAL ZOOM button

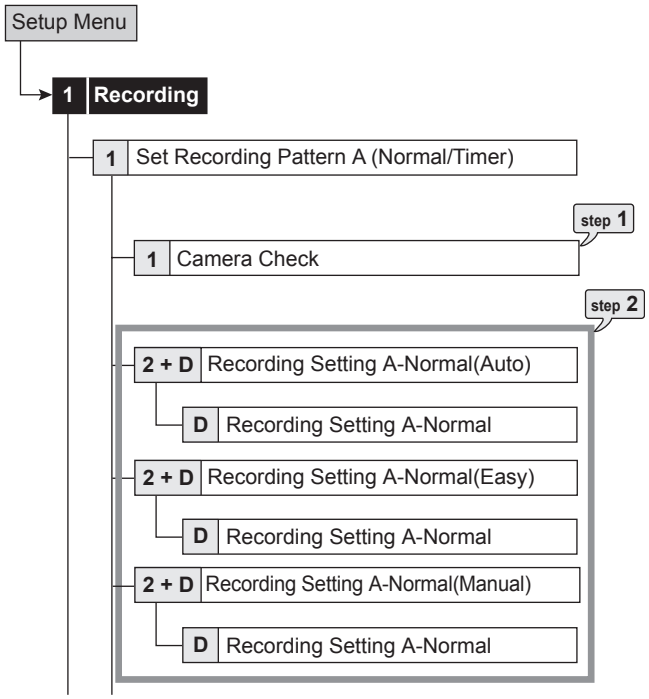
Pressing this button in single screen mode displays the screen at 100%. At this time, the magnification centre point (X) appears. Pressing the button again switches the magnification to 200%, and then 400%. By pressing the MOVE buttons, the centre point moves vertically or horizontally. (☞ see “DIGITAL ZOOM button operations” on page 62)

When the DIGITAL ZOOM button is pressed, camera number buttons 11, 14, 15, and 16 move the “X” in the screen.

■ Basic manual recording

This function is to setup the recording parameters of recording setting pattern A to start recording manually. Ensure all the cameras are connected and time and date has been set correctly. Before you start recording, check the repeat recording settings in the <Data Management Setting for Main Memory> (☞ page 77) first, and then make the recording settings.

- Make the manual recording settings on the <Set Recording Pattern A (Normal/Timer)>.
- <Set Recording Pattern A (Normal/Timer)> can be used for manual or timer recording. <Set Recording Pattern B (Timer)> to <Set Recording Pattern D (Timer)> are used for timer recording only.
- Settings here are for manual recording only. For timer recording, settings must be made on the <Timer> menu (☞ page 54).



♦ Setting the recording rate and picture grade for normal recording

step1. Execute camera check.
- The unit automatically detects the cameras with video signal at their input when you select “Execute.” The detected cameras are used in the Auto and Easy settings calculation in step 2.

After executing the camera check, the recording settings are made only for the camera numbers with the video signal input when using auto or easy setting.

step2. Set the normal recording menu.
Auto: Automatically sets the picture grade and the recording rate by setting the recording cycle and the recording hour per day. Set the desired settings and then select “Execute.”
- The preview screen appears automatically when the auto setting is executed.

Easy: Sets the frame or field recording, recording rate, and picture grade for normal recording to the same settings for all the cameras. When the recording rate is set to “– – –” for all the camera numbers, normal recording does not perform. Set the desired settings and then select “Execute.”
- The preview screen appears automatically when the easy setting is executed.

Manual: Sets per camera, the frame or field recording, recording rate, and picture grade for normal recording. When you set “– – –” for the recording rate, the recording does not perform for that camera number.
- Select “View” to display the preview screen and check your settings.

When you set frame recording, the recording rate display in the preview screen turns green.

The recording rate display turns red when the value exceeds 100 pps in total.

<Estimated Recording Time>

- The estimated continuous recordable time is displayed on the bottom of the preview screen which is dependent on the picture grade and the recording rate settings for normal recording. (The time does not reflect alarm recording settings.)
- When the main device is partitioned, <Estimated Recording Time> shows the estimated recordable time for normal recording.

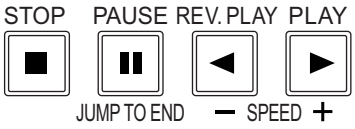
step3. Press the REC/STOP button.
- The REC/STOP button lights up and recording starts.

step4. To stop recording, press the REC/STOP button for more than 2 seconds.
- Recording stops and the light turns off.

■ Basic playback

This function is used to playback recorded data. This unit allows recorded data to be played back using various methods. The basic playback described below is the most common method for playback.

step1. Press the PLAY button inside of the front door.
- Playback starts.
- After turning the power on, the oldest recording data is played back first. Otherwise, playback resumes at the stopped position of the previous playback spot.



When the “Playback Device Repeat Setting” (☞ page 78) is set to “Repeat Off,” playback stops when reaching the physical end of the HDD or end point of the recording section. When the “Playback Device Repeat Setting” is set to “Repeat On,” recorded data is played back repeatedly.

[To change the playback device:]

step2-1. Select the playback device and playback area in the <Select Source Device> (☞ page 39).
Main: Plays back the contents from the main HDD device.
Normal: Normal recording area
Alarm: Alarm recording area
LPA: Long pre-alarm recording area
Copy 1: Plays back the recorded contents of the copy 1 device.
“SerialBus,” “DVD/CD,” “USBmemory”
Copy 2: Plays back the recorded contents of the copy 2 device.
“Internal,” “SerialBus,” “DVD/CD”

“Alarm” appears when “Alarm Recording Area” (☞ page 77 “Change Partition Setting”) is set to other than “0 %.”

“LPA” appears when “Long Pre-Alarm Area” (☞ page 77 “Change Partition Setting”) is set to other than “0 %.”

step2-2. Press the PLAY button.
- Playback of the selected device starts.

When you press the PAUSE/JUMP TO END button during the playback is stopped, the still frame playback picture around the end point of the latest recording is displayed.

step3. To pause playback, press the PAUSE button.
- To resume playback, press the PAUSE button again or press the PLAY button.

step4. To stop playback, press the STOP button.
- When executing playback again, the playback starts from the stopped position of the previous playback.

Pressing the OUTPUT A/B button on the front panel switches the multiplexer video output. When OUTPUT A is selected, the button light indicator is off. When OUTPUT B is selected, the button light indicator is on, and the buttons related to playback function are operated for the monitor screen connected to the OUTPUT B connector. Pressing the OUTPUT A/B button again switches the multiplexer output to OUTPUT A.

The playback of each camera may not be executed at a constant speed depending on the recorded condition.

During the split screen display, the playback speed may be slower than the speed used for recording.

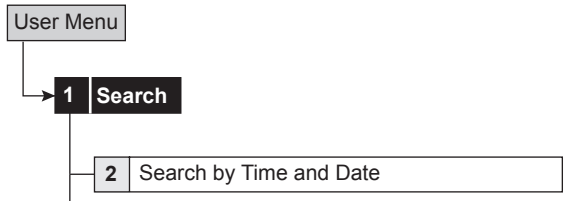
When playing back on both OUTPUT A and B, the playback speed may be affected and become slower.

■ Basic search

This function is used to search the start point of needed picture. This unit is equipped with 5 search functions (Search by Time and Date, Search by Alarm List, Find data storage location, Search by Book Mark, and Search by Motion). In this section, the common search methods, search by time and date and search by alarm list, are described.

◆ Search by Time and Date

This item is used to search recording picture by specifying date, hour, minute, second, and camera number. The search result is displayed in still frame playback. When searching for 1 camera number, the search result is displayed in the single screen display. When searching for 2 or more camera numbers, it is displayed in SPLIT16 screen.



step**1.** To input the time and date to be searched manually, select “Manual” and then set the date, month, year, hour, minute, and second.
- To input the start and end points of recording, select “Start” and “End” respectively.

step**2.** Set the camera numbers to be searched.

step**3.** Select “Search.”

step**4.** To playback the searched picture, press either the PLAY button or the PAUSE button.

step**5.** To stop playback or still frame playback, press the STOP button.

To change the source device to be searched, set the desired device in the <Select Source Device> (☞ page 39).

To display the single screen display of the desired camera number when the search result is displayed in the SPLIT16 screen, press the desired camera number button.

When there is no recording data of the set time, the picture of the closest time and date for the set camera number is displayed in still frame.

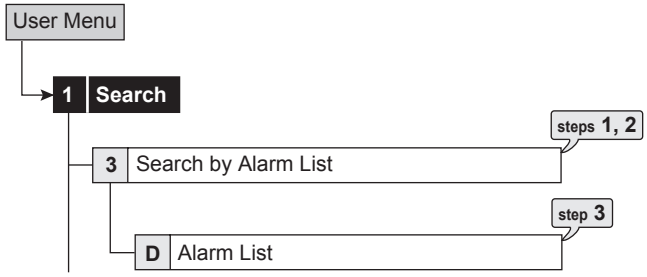
When the multiple recording data of the same date and time are existed, execute search by time and date more than once until the desired picture is searched.

Depending on the recording condition, search by time and date function may not operate correctly.

When you change the display from single to split or from split to single during still frame playback, the recording picture may not be existed at that point or picture may not be displayed depending on the selected camera number or timing of displaying the still frame playback picture.

◆ Search by Alarm List

This unit stores the start time of alarm recording and emergency recording in the alarm list when such recording begins. This item is used to search the desired picture using the list of alarm recording (emergency recording). The search result displays in still frame playback of the single screen display.



step**1.** Set the date, month, year, hour, minute, second, and sensor number to be searched.
Latest: Displays the date and time of the latest recording.

step**2.** Select “Alarm List.”

- The alarm list may take longer time to display completely when there are many items in the list.
- The displayed alarm list shows the list of alarm recordings which have been started before and closest to the specified time.

step**3.** Select the alarm list you want to display.

- To change the source device to be searched, set the desired device in the <Select Source Device> (☞ page 39).

  To execute alarm list search while the “Alarm area” and “LPA area” are set, set the playback area to “Alarm” and “LPA” respectively.
- “Sensor” display indicates the sensor number to which the alarm signal is input.
- When repeat recording setting for normal and alarm areas (☞ page 77) are set to “Repeat Off” and there is an alarm recording (emergency recording) at the end of the HDD, that recording may not be stored in the alarm list and that item may be missed.
- When the data of the camera number which is not corresponded to the alarm sensor number is copied to the external media, the alarm list of that data is not exactly similar to that of listed in the digital recorder.
- When the detection of the motion or the ground of the ALARM IN terminal occurs numerously at the same time, not all the start times of the alarm recording may be registered in the alarm list. In this case, the sensor of the lowest number is registered in the list.
- In the alarm list, items with the ALARM IN terminal grounded are indicated in orange, items that were detected with motion are indicated in white, items with the EMERGENCY terminal grounded are indicated in magenta, and items that were input with alarm signal via communication are indicated in green.
- To clear the alarm list, erase the HDD data of which the alarm recording is recorded (☞ page 79). Beware that executing it erases all the data of the HDD containing the picture data.
- Alarm list search is not performed if there are no index signals.
- When alarm recording (emergency recording) is started while displaying the <Alarm List>, you must first exit the <Alarm List> and then display it again. The new item is added to the list. In this case, you may have to specify the date and time to be searched again.
- For alarm list search of LPA area, the list from the start point of media is displayed when selecting “To latest,” and the list from the end point of media is displayed when selecting “ To oldest.”

■ Communications by Web Browser

The Web browser on the personal computer can capture the pictures that have been recorded and live pictures from the camera that is connected to this recorder. Also, some of the recorder settings can be made via the personal computer.

◆ The personal computer product requirements

- OS: Microsoft Windows 98SE, Windows 2000, Windows Me or Windows XP.
- CPU: IBM PC/AT compatible with an Intel Pentium series processor of at least 500 MHz.
- RAM: 256 MB or more.
- HDD: System drive with unused space of at least 200 MB.
- Web Browser Soft: Microsoft Internet Explorer 5.5 or later.
- Display device: XGA (1024 pixels x 768 pixels) or higher.

❗ Microsoft and Windows are registered trademarks of the Microsoft Corporation in the US and other regions.

(The official name of Windows is Microsoft Windows Operating System.)

All other company and product names appearing herein are the property of their respective owners.

- Windows 98SE is an abbreviation of Microsoft Windows 98 Second Edition.
- Windows 2000 is an abbreviation of Microsoft Windows 2000 Professional.
- Windows Me is an abbreviation of Microsoft Windows Millennium Edition.
- Windows XP is an abbreviation of Microsoft Windows XP Home Edition/Professional.

❗ The product requirement described above cannot guarantee operations in all environments.

❗ Lack of compatibility between Web functions and the PC peripheral driver may, in rare instances, result in abnormal operation. If this happens, upgrade to the newest version of Internet Explorer and try again.

◆ Connections

- When making a direct connection between this unit and a personal computer (hereinafter PC), use a cross cable, and when making a connection through a HUB, use a straight cable.
- Refer to the PC instruction manual for instructions on how to set the Web settings on the PC.

■ Login

Start up the Microsoft Internet Explorer and log in.

step1. Start up the Microsoft Internet Explorer and enter the IP address of the recorder.
- Enter the IP address which is set in <LAN (Communication) Setting> (☞ page 71). When shipped from the factory, the IP address is set to “192.168.000.100.”
- The “[Login]” screen appears.

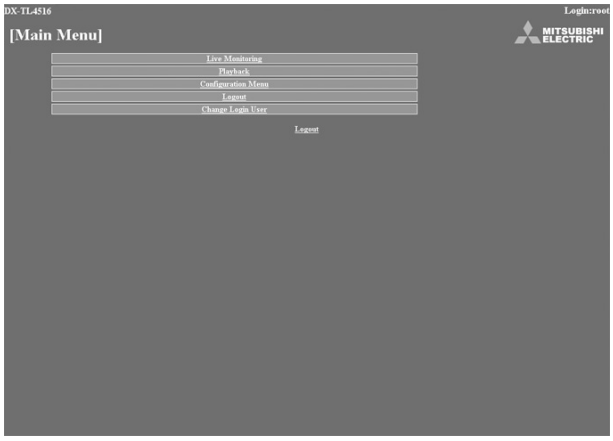
step2-1. (When logging in • • •)

First, enter the “User ID” and the “Password.” When shipped from the factory, the user ID for the full-rights user is “**root**,” and the password is “**admin000**,” the user ID for the live user is “**guest**” and the password is “**guest**.”

❗ More than one user can log in simultaneously using the same user ID and password.

❗ However, there are restrictions depending on authorization. The maximum number of users that can be connected at the same time is 10.

step2-2. Select “login” and then left-click or press ENTER.
- The “[Main Menu]” screen appears.



step**3**-1. (If you make an error in entering the user ID or password • • •)
- The “[Caution]” screen appears.

step**3**-2. Select “Login” and either left-click or press ENTER.
- The “[Login]” screen appears.

step**3**-3. Follow step 2-1 and enter the correct “User ID” and “Password.”

step**4**-1. (If you do not log in • • •)

Select “If you won’t log in, please go to Logout.” and left-click.

step**4**-2. The message “Session ID removed from recorder & browser. Please close the browser.” is displayed. Close the Web Browser at this point.

step**5**-1. (To change password • • •)

The password can be changed in the “[Login]” screen only by the user who has the authorization to change a password. Follow the instructions in the menu and enter the current “User ID” and “Password.”

step**5**-2. Enter the new password in “New password” and again in “New password (Confirmation).”

❗ The number of characters that can be used in registering a password is 16. Both alphabet letters and numbers can be used with a distinction made between upper and lower case. You cannot use spaces.

step**5**-3. To change to a new password, select “change” and left-click or press ENTER. To cancel the change, select “clear” and left-click or press ENTER.

■ Main Menu

This is the screen for selecting, from “Main Menu,” “Live Monitoring” with which live pictures are retrieved and displayed, “Playback” with which pictures that have already been recorded are retrieved and displayed, “Configuration Menu” which allows changes to the settings of the recorder, “Logout” for ending a job, or “Change Login User” for making a change in the logged-in user.

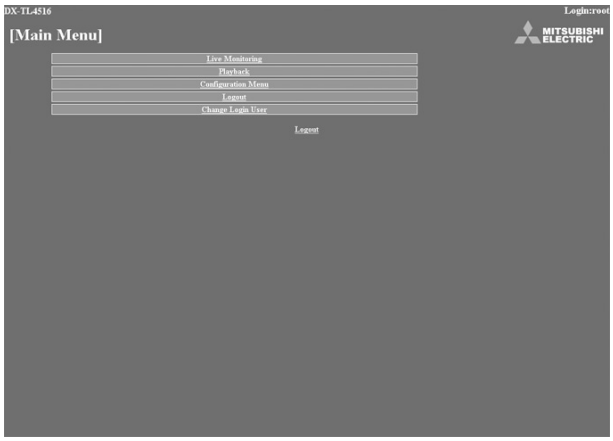
❗ Depending on the user’s authorization, there are certain menus that cannot be selected.

❗ The transfer rate at communication changes depending on the communication environment or unit’s status. For stable communication, use this unit with the proper image transfer speed suitable to the conditions of the communication line.

❗ The user’s session ID (connection data) is lost in 5 minutes from the final operation that includes picture retrieval. If no operations are made within that 5 minutes, no other operations can be made after that so close the browser and then log in again.

❗ If the unit’s MAIN switch is “OFF,” live and recorded pictures cannot be retrieved.

step**1**. Select the desired menu from “Main Menu” and left-click.

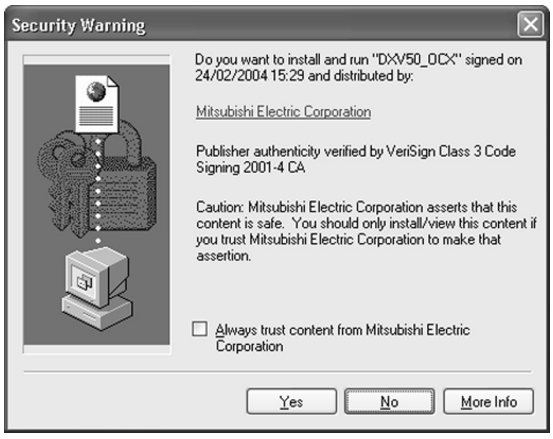


♦ Live Monitoring

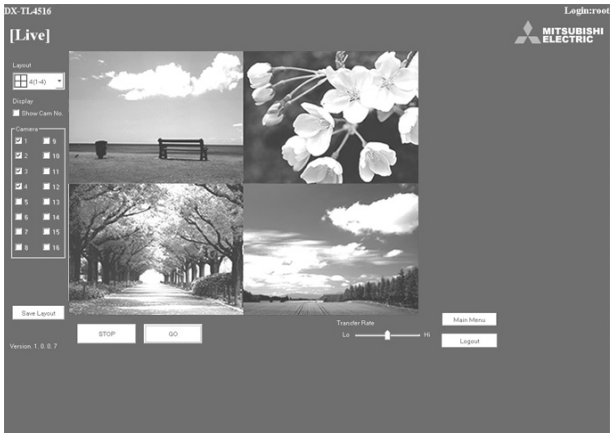
Retrieves live pictures and displays the pictures on the PC screen.

step**1.** Select “Live Monitoring” and left-click.
- The “[Live]” screen appears.

❗ When picture acquisition is tried for the first time with the Web browser of a personal computer, a message as shown below may be displayed. If it is displayed, click “Yes.”


Security Warning
Do you want to install and run "DXV50_OCX" signed on 24/02/2004 15:29 and distributed by:
Mitsubishi Electric Corporation
Publisher authenticity verified by VeriSign Class 3 Code Signing 2001-4 CA
Caution: Mitsubishi Electric Corporation asserts that this content is safe. You should only install/view this content if you trust Mitsubishi Electric Corporation to make that assertion.
Always trust content from Mitsubishi Electric Corporation
Yes
No
More Info

❗ When the unit is recording at the full rate (100 pps), the picture supplied from the camera which is not used for recording at that time may not be updated.



<Function description>

STOP	:	Stops the retrieval of an picture.
GO	:	Starts (or restarts) the retrieval of an picture.
Display	:	For selecting either the display or non-display of a camera number.
Layout	:	For selecting from the 12 types of display patterns. (default: 4(1-4) screen)
Camera	:	Selects the camera number that you want to display and check.
Transfer Rate	:	Selects one of 5 stages from “Lo” to “Hi” for picture retrieval speed. (default: middle)
Save Layout	:	The layout of the screen display is registered to “Local PC.”
Main Menu	:	Returns to the “Main Menu.”
Logout	:	For logging out.

❗ Setting “Transfer Rate” to “Hi” may present a problem to the PC operations. This could be due to the PC’s hardware/software performance you are using. Adjust the image transfer rate that best meets your machine.

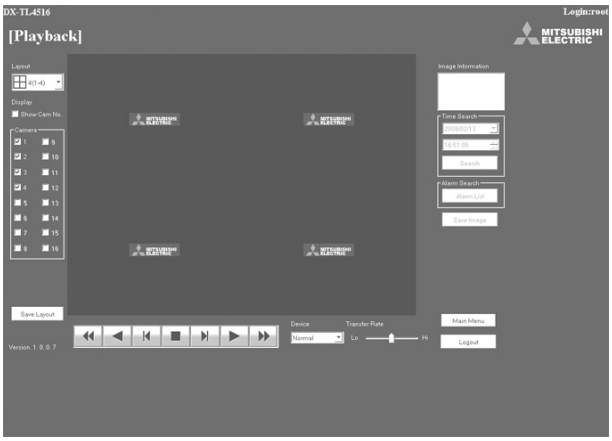
❗ Depending on the network capacity and the load conditions, the transfer rate may be affected.

❗ Picture may vibrate vertically when displaying the live picture of the camera of which picture is set for frame recording.

◆ Playback

Retrieves, plays back and searches for pictures that have been recorded by the recorder.

step1. Select “Playback” and left-click.
- The “[Playback]” screen appears.



step2. Press the ▶ button.
- Playback starts.

<Function description>

▶ : Press to start playback.

▶▶ : Press to start speed search in the forward direction at speeds of x2, x4, x8 and x16.

▶| : Press to frame-by-frame playback in the forward direction.

◀ : Press to start reverse playback.

◀◀ : Press to start speed searches in the reverse direction at speeds of x2, x4, x8 and x16.

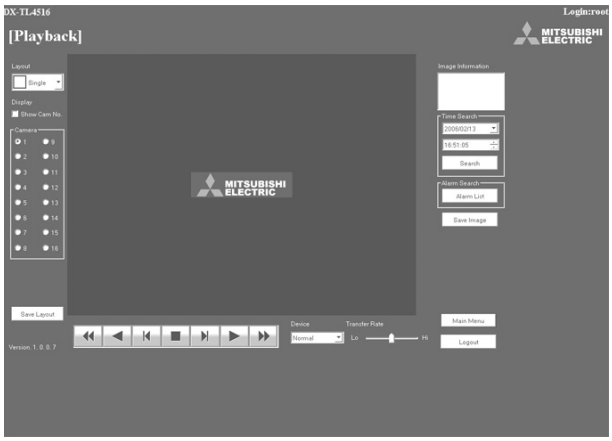
|◀ : Press to frame-by-frame playback in the reverse direction.

■ : During playback or searching, press to stop playback for still frame.

Device : Selects the HDD for playback and search. (default: Normal)

The date, time, and the camera number for the picture acquired are displayed in “Image Information.” Clicking “Save Image” stores the picture that is still-frame displayed in the PC in bit map format.

The following searches can be selected in single-screen display.



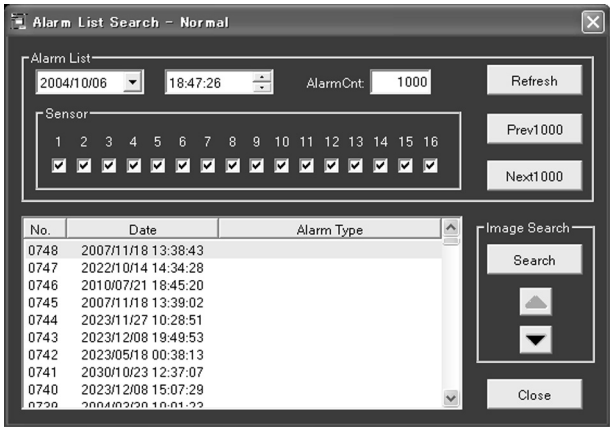
The function of searching for recorded picture data is effective only when the single-screen display has been selected in the “Playback” menu. The function cannot operate during picture data playback so to make a search of any type first stop the playback.

● Time Search

Select the date and time and click “Search.”

● Alarm List Search

Click “Alarm List” and the “Alarm List Search” screen appears in the sub-screen.



step1. Set the desired date/time and number of alarm list items to be acquired, and then click “Refresh” to acquire the alarm list.
- The alarm list cannot be acquired without clicking “Refresh.”
- Enter the needed number of alarm list items to be acquired in “Alarm Cnt.” If number entered is too large, depending on the recording condition, it may take a long time to acquire the list or the desired number of list items may not be acquired.
- “Sensor”: Check the desired sensor number for acquiring the alarm list items.

step2. Select the “No.” desired, and then click “Search.”
- Click “Prev(number)” for a search in the reverse direction and click “Next(number)” for a search in the forward direction.
- Click “Refresh” again to re-acquire the “Alarm List,” and click “Close” to hide the “Alarm List Search” menu.

● Image Search

Click ▲ to display the picture of the next alarm list item.

Click ▼ to display the picture of the previous alarm list item.

♦ Configuration Menu

This is the screen for making some of the recorder settings.

step1. Select “Configuration Menu” in the “[Main Menu]” screen.
- The “[Configuration Menu]” screen appears.

step2. Select the desired “Configuration Menu” and left-click.

● User Registration

This is the screen for changing the settings for registered user authorization, and for deleting a registration. It can also be used for registering new users.

step1. Select “User Registration” and left-click.
- The “[User Registration]” screen appears.

step2-1. (To change registered user settings • • •)

Select the user ID for changing the settings in the “Change authorities of users” settings.
- Select the items that you want to change.

<Authority>

Live Monitoring	: Allows viewing of live pictures. It is a mandatory rank to be registered.
Playback	: Allows viewing of recorded pictures.
All Cameras	: Allows viewing of pictures from all the cameras. (The picture of the cameras set to “Off” in the covert camera setting can also be displayed. ☞ page 66)
Change Passwords	: Allows changing of user’s password.
Configuration	: Allows viewing and editing of user registration information.

❗ Certain items cannot be selected depending on what the user authorization is.

❗ “Configuration” authorization can be used by only one user. From the time that a user logs in until that user logs out and gives up authorization, any other user that logs in is regarded as a user who does not have “Configuration” authority.

❗ “Playback” authorization can only be used by one user. From the time that a user logs in until that user logs out and gives up authorization, any other user that logs in is regarded as a user who does not have “Playback” authority.

step2-2. (To change settings • • •)

Select “change” and left-click. The “[Change Confirmation]” screen appears.

step2-3. If you want to make the change, left-click “change.” If you want to cancel a change, left-click “cancel.”

step2-4. (When you have selected “change” • • •)

The “[Completed]” screen appears, so then left-click “User Registration.”
- The “[User Registration]” screen reappears.

step2-5. (When you have selected “cancel” • • •)
- The “[User Registration]” screen reappears.

step3-1. (To delete a registered user • • •)

Left-click on “remove” in the user ID that you want to delete in “Change authorities of users.”
- The “[Remove Confirmation]” screen appears.

step3-2. If you want to delete it, left-click “remove.” If you don’t want to delete it, left-click “cancel.”

step3-3. (If you have selected “remove” • • •)

The “[Completed]” screen appears, so left-click “User Registration.”
- The “[User Registration]” screen reappears.

step3-4. (If you have selected “cancel” • • •)
- The “[User Registration]” screen reappears.

step4-1. (To register a new user • • •)

Enter the new user ID and new password in “Add New User.”

step4-2. Refer to step 2-1, select the “Authority” desired and put a check mark.

❗ A user ID with the same name cannot be registered. The maximum number of characters that can be used in registering a password is 16. Both alphabet letters and numbers can be used with a distinction made between upper and lower case. You cannot use spaces.

step4-3. If you want to make a new registration, left-click “register.” If you want to cancel a new registration, left-click “clear.”

step4-4. (If you have selected “register” • • •)

It is added to “Change authorities of users.”

step4-5. (If you have selected “clear” • • •)

Clears the specified contents.

● Recorder Title & Camera Titles

This is the screen for setting or changing the recorder and the camera titles.

step1. Select “Recorder Title & Camera Titles” and left-click.
- The “[Recorder Title & Camera Titles]” screen appears.

step2. Enter the desired recorder or camera title to “New Text.”
- The recorder and the camera titles currently set are shown in the “Current Text.”

step3. Select “change” and left-click.

● E-mail Setup

This is the screen for setting the information related to the e-mail server or sender, and for setting the e-mail address of the receiver.

step**1.** Select “E-mail Setup” and left-click.
- The “[E-mail Setup]” screen appears.

step**2.** (When making the settings to send the e-mail • • •)

Input the desired settings for “SMTP Server (Host Name or IP),” “POP Server (Host Name or IP),” “POP User ID,” “POP User Password,” “DNS Server 1 Address,” “DNS Server 2 Address,” “From:,” and “Recorder ID.”
- The settings currently set are shown in the “Current Settings.”

The maximum number of characters that can be used to set the e-mail address is 49.

step**3.** To send the test e-mail, select “From Address Test (send test mail)” and left-click.

step**4.** (When attaching alarm recording picture to e-mail • • •)

Put a check mark on “Picture” checkbox.
- E-mail with the picture which is captured during alarm recording is sent to the marked user. The file extension of the picture data file which is attached to e-mail is “.aap”.
- “Delay time to attachment” is used to determine the timing of capturing the picture to be attached. The time period between occurrence of alarm and capture of the picture can be set up to 10 seconds.

You cannot send the picture when the alarm recording is not performed.

The picture to be attached is captured during alarm recording of which trigger is input of the rear terminal.

To perform this function, put a check mark on “Sensor.”

When the multiple notifications are occurred at the same time, notification may be delayed or not all the items may be notified.

When the alarm recording time is shorter than the specified delay time, the picture cannot be attached.

When the multiple alarm signals are input at the same time, only the picture from the camera corresponding to the lowest sensor number is attached.

To view the attached picture:

In the PC with DX-PC55E (version 2.1 or later) installed,

click or double click the file.

In the PC without DX-PC55E installed,

drag the file and drop it into the “MPicViewer.exe” which is stored in the supplied CD.

The displayed picture can be printed or can be saved in general image formats.

step**5-1.** (When setting the receiver’s address • • •)

Enter the desired e-mail address to “New Address.”

step**5-2.** Set the contents to be transmitted from the recorder to the PC.
- “Remain,” “Temp/Fan,” “Reboot,” “Record,” “Alarm,” and “Sensor” settings can be set. ☞ page 71.

step**5-3.** Select whether to activate or inactivate the e-mail address you have set.
- When a check mark is put to “Active” column, the selected e-mail address becomes active.

step**5-4.** Select “set” and left-click.

step**5-5.** Select “send” to send the test e-mail.

When the e-mail notifications or IP notifications have been occurred frequently, the operation of the recorder may become unstable.

● Access Mode Setup

This is the screen for changing the SSL settings.

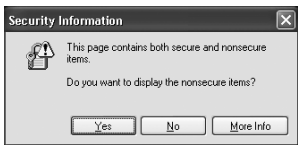
step1. Select the item to be changed in the “Access Mode Setup.”
- Use SSL for Web Access:
  Sets the level of the encoding function (SSL).
  “No SSL”: Does not use the encoding function.
  “Menus only”: Uses the encoding function for the menus only.
  “Menus + Pictures”: Uses the encoding function for the menus and pictures.
- SSL Port Settings:
  Sets the port number used for SSL communication.
- Band-Width Limit:
  Controls the band width of the communication.

When you use SSL, the following message appears. Select “Yes” and then continue the operation.

Security Alert
Information you exchange with this site cannot be viewed or changed by others. However, there is a problem with the site's security certificate.
The security certificate was issued by a company you have not chosen to trust. View the certificate to determine whether you want to trust the certifying authority.
The security certificate has expired or is not yet valid.
The name on the security certificate is invalid or does not match the name of the site
Do you want to proceed?
Yes
No
View Certificate

When displaying live or playback picture while “Use SSL for Web Access” is set to “Menus only,” the following message appears. Select “Yes” to display the live or playback picture.

In this case, the key-shaped icon which shows the encoded communication of the browser is not displayed, however, communication is carried out with encoded.

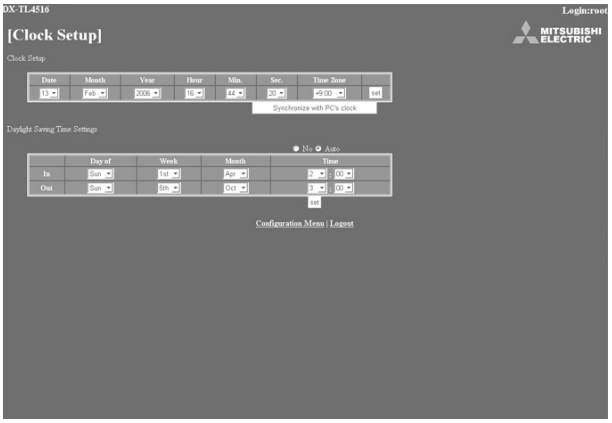


step2. Set the desired setting in “New Settings” and then select “change” and left-click.

● Clock Setup

This is the screen for setting the clock of the recorder via PC.

step1. Select “Clock Setup” and left-click.
- The “[Clock Setup]” screen appears.



step2-1. Set “Month,” “Date,” “Year,” “Hour,” “Min.,” “Sec.,” “Time Zone” to the desired time.

step2-2. Select “set” and left-click.

step3. (When setting the clock using “Synchronize with PC’s clock” • • •)

When you want the clock of the recorder to be synchronized with the PC clock, select “Synchronize with PC’s clock” and left-click.
- The clock of the recorder is set to the same time as that of the PC.
- When using this function on the timing that the year, month, day, hour, or minute is changed, check the clock after synchronizing with the PC clock.

step4. (When setting the daylight saving time function • • •)

Select “No” when you do not want to use the daylight saving time function.

Select “Auto” to use the daylight saving function.
- When selecting “Auto,” set the desired time period for activating the daylight saving time function and then select “set.”

♦ Logout

In this screen, assign “Logout” settings to end the job.

step**1.** Select “Logout” and left-click.
- The “[Logout]” screen appears.

step**2.** Close the Web Browser.

If the browser is closed incorrectly (not logging out correctly), the user’s session ID is saved for 5 minutes. If the Log in is made with the same user ID within that 5 minutes, operation limits may take effect.

♦ Change Login User

This screen is for changing the logged in user.

step**1.** Select “Change Login User” and left-click.
- The “[Login]” screen appears.

step**2-1.** (To change the logged in user • • •)

In the “Login (or change login user)” settings, execute step 2-1 and 2-2 in “■ Login” and change the logged in user.
- The logged in user is changed and the “[Main Menu]” screen appears.

step**2-2.** (To log in without changing the user • • •)

Select “Return” button on the browser and left-click.

step**2-3.** (To log out • • •)

Select “If you won’t log in, please go to Logout.” and left-click.

Recording time table

■ Continuous recording time table

❗ The following table shows the total number of recordable pictures of all the cameras which are set for recording.

When recording on a 400 GB HDD:

Without audio recording

d : day, h : hour

Picture grade \ Number of pictures /sec.	100	66.7	50	40	33.3	25	16	13
L6-34KB	1d07h	1d22h	2d14h	3d6h	3d21h	5d5h	8d3h	10d1h
L5-28KB	1d14h	2d8h	3d4h	3d23h	4d17h	6d8h	9d22h	12d5h
L4-22KB	2d	3d	4d1h	5d1h	6d	8d2h	12d15h	15d13h
L3-16KB	2d18h	4d3h	5d13h	6d23h	8d7h	11d3h	17d9h	21d10h
L2-10KB	4d11h	6d15h	8d22h	11d3h	13d7h	17d20h	27d21h	34d8h
L1-5KB	8d22h	13d8h	17d21h	22d8h	26d16h	35d18h	55d21h	68d18h

Picture grade \ Number of pictures /sec.	10	8	4	2	1	0.5	0.25	0.125	Number of recording pictures
L6-34KB	13d1h	16d7h	32d15h	65d6h	130d13h	261d2h	522d5h	1044d10h	11,279,200
L5-28KB	15d21h	19d20h	39d16h	79d9h	158d18h	317d12h	635d1h	1270d3h	13,716,800
L4-22KB	20d5h	25d7h	50d14h	101d4h	202d8h	404d17h	809d11h	1618d22h	17,484,000
L3-16KB	27d20h	34d19h	69d15h	139d7h	278d15h	557d7h	1114d15h	2229d7h	24,076,000
L2-10KB	44d15h	55d19h	111d15h	223d6h	446d12h	893d1h	1786d2h	3572d4h	38,579,200
L1-5KB	89d9h	111d18h	223d12h	447d1h	894d3h	1788d6h	3576d13h	7153d3h	77,253,600

With audio recording <Audio recording using 12.8 KHz PCM sampling is possible.>

Picture grade \ Number of pictures /sec.	100	66.7	50	40	33.3	25	16	13
L6-34KB	1d7h	1d22h	2d14h	3d5h	3d20h	5d3h	7d23h	9d18h
L5-28KB	1d13h	2d8h	3d3h	3d22h	4d16h	6d5h	9d15h	11d19h
L4-22KB	2d	2d23h	4d	4d23h	5d22h	7d21h	12d5h	14d21h
L3-16KB	2d18h	4d2h	5d11h	6d19h	8d3h	10d19h	16d14h	20d5h
L2-10KB	4d9h	6d13h	8d17h	10d19h	12d20h	17d	25d21h	31d8h
L1-5KB	8d17h	12d20h	17d	21d	24d20h	32d12h	48d7h	57d16h

Picture grade \ Number of pictures /sec.	10	8	4	2	1	0.5	0.25	0.125
L6-34KB	12d14h	15d14h	29d21h	55d3h	95d11h	150d11h	211d9h	265d
L5-28KB	15d4h	18d19h	35d16h	64d21h	109d18h	167d18h	227d23h	277d20h
L4-22KB	19d3h	23d14h	44d7h	78d19h	129d1h	189d10h	247d8h	291d22h
L3-16KB	25d20h	31d17h	58d6h	100d4h	156d10h	217d11h	270d5h	307d11h
L2-10KB	39d16h	48d6h	85d1h	137d9h	198d10h	255d3h	297d16h	324d17h
L1-5KB	71d12h	85d3h	137d13h	198d16h	255d11h	298d1h	325d3h	340d15h

When recording on a 250 GB HDD:

Without audio recording

d : day, h : hour

Picture grade \ Number of pictures /sec.	100	66.7	50	40	33.3	25	16	13
L6-34KB	0d19h	1d5h	1d15h	2d	2d10h	3d6h	5d2h	6d6h
L5-28KB	0d23h	1d11h	1d23h	2d11h	2d23h	3d23h	6d4h	7d15h
L4-22KB	1d6h	1d21h	2d12h	3d3h	3d18h	5d1h	7d21h	9d17h
L3-16KB	1d17h	2d14h	3d11h	4d8h	5d5h	6d23h	10d20h	13d9h
L2-10KB	2d18h	4d4h	5d13h	6d23h	8d8h	11d3h	17d10h	21d10h
L1-5KB	5d13h	8d8h	11d3h	13d22h	16d17h	22d7h	34d21h	42d22h

Picture grade \ Number of pictures /sec.	10	8	4	2	1	0.5	0.25	0.125	Number of recording pictures
L6-34KB	8d3h	10d4h	20d9h	40d18h	81d12h	163d	326d1h	652d2h	7,042,000
L5-28KB	9d21h	12d9h	24d18h	49d13h	99d3h	198d6h	396d12h	793d	8,564,000
L4-22KB	12d15h	15d19h	31d14h	63d4h	126d8h	252d16h	505d9h	1010d19h	10,916,000
L3-16KB	17d9h	21d17h	43d11h	86d23h	173d23h	347d23h	695d23h	1391d22h	15,032,000
L2-10KB	27d21h	34d20h	69d16h	139d9h	278d19h	557d14h	1115d4h	2230d8h	24,087,000
L1-5KB	55d19h	69d18h	139d13h	279d3h	558d6h	1116d13h	2233d2h	4466d4h	48,234,000

With audio recording <Audio recording using 12.8 KHz PCM sampling is possible.>

Picture grade \ Number of pictures /sec.	100	66.7	50	40	33.3	25	16	13
L6-34KB	0d19h	1d5h	1d14h	2d	2d9h	3d5h	4d23h	6d2h
L5-28KB	0d23h	1d11h	1d23h	2d10h	2d22h	3d21h	6d	7d8h
L4-22KB	1d6h	1d21h	2d11h	3d2h	3d17h	4d22h	7d15h	9d7h
L3-16KB	1d17h	2d13h	3d10h	4d6h	5d2h	6d17h	10d8d	12d15h
L2-10KB	2d18h	4d2h	5d10h	6d18h	8d1h	10d14h	16d3h	19d13h
L1-5KB	5d10h	8d1h	10d15h	13d3h	15d13h	20d7h	30d4h	36d

Picture grade \ Number of pictures /sec.	10	8	4	2	1	0.5	0.25	0.125
L6-34KB	7d20h	9d17h	18d15h	34d10h	59d14h	93d22h	131d23h	165d11h
L5-28KB	9d11h	11d17h	22d7h	40d12h	68d12h	104d17h	142d8h	173d11h
L4-22KB	11d22h	14d17h	27d15h	49d4h	80d13h	118d6h	154d10h	182d6h
L3-16KB	16d3h	19d19h	36d9h	62d13h	97d16h	135d19h	168d17h	191d23h
L2-10KB	24d18h	30d3h	53d2h	85d18h	123d21h	159d7h	185d20h	202d18h
L1-5KB	44d15h	53d4h	85d21h	124d1h	159d12h	186d2h	203d	212d16h

❗ Continuous recordable time and the estimated time displayed on the menu screen indicate the continuous time of recording operation of this unit. They indicate the period for neither the product warranty nor that for reliability of used parts.

Troubleshooting

If problems with the unit persist even after you've followed the suggestions below, disconnect the power cord and contact the retailer from whom you purchased the unit.

	Description of problem	Consult the following	Page
INSTALLATION	The unit does not be turned on.	• Is the power cord properly plugged in? • Is the LOCK indicator light on? • Is the TIMER indicator light on? • Is the MAIN switch on the rear of the unit set to "OFF" ?	- 12,60,61 12 16
	Power is on, but the unit does not operate.	• Is the LOCK indicator light on? • Is the POWER indicator flashing? (The unit cannot be operated while the POWER indicator is flashing.) • The safety features may be in operation. Reset the unit by pressing the RESET button on the rear panel using a ballpoint pen or similar object, and then turn the power on again.	12,60,61 12 17,83
	Pictures are not appearing on the monitor.	• Are the monitor and camera(s) connected correctly? • Is the unit receiving an input signal from the selected camera? Check this by displaying the SPLIT16 screen.	18 62
	The quality of the monitor picture is poor.	• Is the connecting cord connected correctly? • Is the camera's focus adjusted correctly?	– –
RECORDING	The unit does not start recording.	• Is repeat recording set to "Repeat Off"? • The recording starts after the time set for recording rate is passed. Was the unit stopped during that time?	77 91
	The unit does not stop recording.	• Is the LOCK indicator light on? • During normal recording, alarm recording, and emergency recording, press the REC/STOP button for more than 2 seconds. • Is timer recording in progress? To stop timer recording, press the TIMER button for more than 2 seconds.	12,60,61 12 14
	The unit does not repeat the recording.	• Is repeat recording set to "Repeat On"?	77
	The unit does not perform timer recording.	• Are the date and current time set accurately? • Are the recording start-/end-times and the recording rate set correctly? • Is repeat recording set to "Repeat Off"?	58 54,55 77
	The unit does not perform alarm recording.	• Is the recording rate for alarm recording set to "– – –"? • Is the recordable capacity for alarm recording area full? • Is the unit in timer recording stand-by mode? (Is the TIMER indicator light on?) • Are the peripheral switches, etc., connected correctly?	50 – 12 18

	Description of problem	Consult the following	Page
PLAYBACK	The unit does not perform playback.	• Is the LOCK indicator light on? • Has the data been erased? • Is the correct playback device selected?	12,60,61 79 39,92
PERIPHERAL RECORDING DEVICE	The copy device dose not respond.	• Has the recording medium been inserted correctly into the unit? • Is the unit currently in the middle of loading the recording medium? • Is the correct playback device selected? • Has the recording medium's write-protect been removed? • Is the power supply of peripheral recording device set ON? • Is the copy device registered in the <Add/Remove HDD Device> or <Add/Remove DVD/CD Drive>?	– – 39,92 – – 75,76
OTHERS	The camera cannot be controlled via this unit.	• Is the camera to be controlled connected correctly? • Is the <PTZ Setting> menu set correctly?	18 72
	The unit does not perform the motion detection function.	• Is trigger for alarm recording of the camera number for which the motion detection function to be executed set to “External” ? • Is the alarm recording rate of the camera number for which the motion detection function is executed set to “– – –”? • Is the value set in “Motion Threshold” of the <Motion Det> menu larger than that of “Motion Mask Settings” ? • Is the detection area set correctly?	51 50 56,57 56,57
	The unit cannot be controlled via the personal computer.	• Is the <COM/LAN> menu set correctly ? • Are the unit and the personal computer connected correctly ? • Is there a defect in the connecting cable ? • Is the proper connecting cable being used ?	70,71 18 – 95
	There is a camera number with a blue screen during split screen display.	• The screen of camera number with no video signal input appears blue even when setting for operation.	63
	Button operation is not working.	• Is the POWER indicator flashing? (The unit cannot be operated when the POWER indicator is flashing.) • Is the LOCK indicator light on?	12 12,60,61
	Cameras cannot be switched with the camera number buttons.	• Is the menu screen being displayed? Camera number buttons cannot be used when the menu screen is displayed.	–
	Menus cannot be set.	• When OUTPUT B is selected, the cursor of the mouse is displayed, however, the menu screen is not displayed and cannot be set. The menus can be set only when the OUTPUT A is selected.	–
	Following functions do not work: • Copy1 • Deletion of copy 1 device data • Loading/Saving menu • Restore • Picture copy	• Is section download function (the function to copy the picture data remotely using the supplied application software, DX-PC55E) performed via communication? The functions described to the left are not performed while section download function is in use.	–

Warnings and CALL OUT output

■ Warnings and their appropriate countermeasures

#1 Options in the CALL OUT output column:
- Selectable: Selects to output CALL OUT signal or not on the menu screen.
- Fixed: Outputs CALL OUT signal from the CALL OUT terminal regardless of the menu setting.
- None: Does not output CALL OUT signal, but displays a warning on the screen.

The warning display appears when the HELP button is pressed during “ALERT” is displayed on the screen. The contents of last 16 warnings are stored and can be displayed. The contents older than them are cleared and output of CALL OUT is cancelled. CALL OUT signal output can be stopped by pressing the E button or clicking “Clear Warning” while displaying the warning display.

Warning Display	Countermeasure	Cancelling the warning	Log number	CALL OUT output #1	Page
The remaining capacity of Normal Area in Main device has become less than **%.#2	• Copy data as necessary.	Click "Clear Warning" or press the E button.	LOG1200	Selectable	59
The remaining capacity of Alarm Area in Main device has become less than **%.#2			LOG1201		
The remaining capacity of LPA Area in Main device has become less than **%.#2			LOG1202		
The remaining capacity of Copy 2 disk has become less than **%.#2			LOG7200		
The remaining capacity of Normal Area in Main device has become 0%.	• When the warning is cancelled, the unit starts overwriting the oldest data remaining in the HDD. • Copy data as necessary.	Click "Clear Warning" or press the E button.	LOG1100#3 LOG4100#4	Selectable None	77
The remaining capacity of Alarm Area in Main device has become 0%.			LOG1101#3 LOG4101#4	Selectable None	
The remaining capacity of LPA Area in Main device has become 0%.			LOG1102	Selectable	
The remaining capacity of disc in Copy 1 drive has become 0%.	• Replace media if necessary.	Click "Clear Warning" or press the E button.	LOG3100	None	41, 42
The remaining capacity of disc in Copy 2 drive has become 0%.			LOG7100	Selectable	41, 42
Copy data size error. Check the range of copy data or the disk space of copy media.	• Set the copy/restore range again. • Replace with new media.	Click "Clear Warning" or press the E button.	LOG3701#5 LOG7701#6 LOG4701#4	None	41, 42
Copy media error. Cannot copy the data. Check the copy device.	• Check that media is in the recording device. (If not, insert the media.) • Check whether that the write-protect of the media is enabled. Is so, cancel the protection. • After turning off the power of the peripheral recording device and the unit, reboot in order of peripheral recording device and the unit. • After turning off the power of the peripheral recording device and the unit, check a cable.	Click "Clear Warning" or press the E button.	LOG3702#5 LOG7702#6 LOG4702#4	None	41, 42
No disk. The drive has no disk or wrong type of disk. Put a proper disk into the drive.	• Insert the disc.	Click "Clear Warning" or press the E button.	LOG3703#5 LOG7703#6 LOG4703#4	None	75
The remaining capacity of disc in Copy 1 drive has become 0%. Put a new disk into the drive.	• Replace the disc.	Click "Clear Warning" or press the E button.	LOG3704#5	None	41, 42
The remaining capacity of disc in Copy 2 drive has become 0%. Put a new disk into the drive.			LOG7704#6		

#2 : The value depends on the setting.
#3 : Log number for recording
#4 : Log number for restore
#5 : Log number for copy 1
#6 : Log number for copy 2

#7 : (The following numbers are entered in □□)
01 : CH 1 02 : CH 2 03 : CH 3 04 : CH 4
05 : CH 5 06 : CH 6 07 : CH 7 08 : CH 8
09 : CH 9 10 : CH 10 11 : CH 11 12 : CH 12
13 : CH 13 14 : CH 14 15 : CH 15 16 : CH 16

#8 : 13□□,14□□: Recording 23□□,24□□: Playback
33□□,34□□: Copy 1 43□□,44□□: Restore
73□□,74□□: Copy 2
(The following numbers are entered in □□)
00 : A (Internal) 01 : B (Internal)
10 to 25 : USB (External)

Warning Display	Countermeasure	Cancelling the warning	Log number	CALL OUT output #1	Page
No Camera Signal Camera signal is lost or distorted. Please check the camera and cable connection.	• Check whether the unit and camera are properly connected and turned on. • Check whether the video signal is being properly outputted. • Check whether the camera with no video signal input is set for operation.	Stop recording. Output video signals. Click "Clear Warning" or press the E button.	LOG54□□#7	Fixed	18 – 49-51, 91
It can use as it is though a slight error occurred.	• Continue the operation when there is no abnormality. • When the error occurs continuously, check the HDD/media and cable and then restart the unit.	Automatically clears after 1 minute.	LOG13□□#8 LOG33□□#8 LOG43□□#8 LOG73□□#8	None	–
		———	LOG23□□#8		
System suspended due to unstable processing. Recording will be resumed. HDD ∗∗∗∗ was disconnected.	• Restart the unit.	Click "Clear Warning" or press the E button.	LOG14□□#8	Fixed	–
			LOG74□□#8		
System suspended due to unstable processing. Start operation again.		Automatically clears after 1 minute.	LOG24□□#8 LOG34□□#8 LOG44□□#8	None	
The recorder detected the data altered or data recorded by other recorder.	———	Click "Clear Warning" or press the E button.	LOG55□□#7	None	78
Recorder detected technical problems on the device.	———	Click "Clear Warning" or press the E button.	LOG6200	Fixed	–
The recorder has been rebooted. The problem is not critical, but check the recorder.	• Check the unit.	Click "Clear Warning" or press the E button.	LOG5100	Fixed	–
Internal temperature is getting too high, check the ventilation of the recorder.	• Turn off the power and change the installation condition.	Click "Clear Warning" or press the E button.	LOG5200	Fixed	–
Internal temperature is getting too high, stop the operation of the recorder immediately.	• Turn off the power and change the installation condition.	Click "Clear Warning" or press the E button. Lower the temperature.	LOG5201	Fixed	–
The fan of the recorder needs to be checked.	• Turn off the power and stop using.	Click "Clear Warning" or press the E button. Rotate the fan.	LOG5300	Fixed	–
Copying data stopped because of new record overwrites the old data.	• Stop HDD recording to continue copy/backup.	Click "Clear Warning" or press the E button.	LOG3500#5 LOG7500#6	None	41, 42
New record will soon overwrite the old data in copying. Stop the recording, if you want to continue the copying.	• Stop HDD recording to continue copy/backup. • Stop copy/backup to continue HDD recording.	Click "Clear Warning" or press the E button.	LOG3600#5 LOG7600#6	None	41, 42
(NONE)	• Restarts by watchdog operation or for self-recovery.	———	LOG5101 LOG5102 LOG5103	–	–

#Regarding LOG14□□: Displays during recording. The system shuts down once and then resumes recording. (The error HDD is automatically deleted from the recording device. The recording is continued until all the registered HDDs are used up.)

#Regarding LOG24□□ to 74□□: Displays during copying or playback. The playback or copy stops because the system shuts down. Carry out playback or copy again.

#Regarding LOG 54□□: Displays during recording when the video signal is not existed for the camera being recorded for 2 seconds or more. This warning may not be displayed for the recording of which recording time is less than 2 seconds.

Check sheet

The following is the sheet for writing down each settings. Use it when you make settings.

The screened values are the default settings. The items marked with * are the menus which are loaded or saved using <Menu Data>. In addition to these items, when using <Menu Data> menu, the following items are also loaded or saved.

- Year/month/date/hour/minute/second setting of search, copy, and restore menus
- Settings of copy device for copy and restore menus
- Settings for e-mail and IP alarm notification

Setup Menu (200 000 000)

1 Recording

1 Set Recording Pattern A (Normal/Timer) *

2 Normal Recording Menu

	Frame / Field		Recording Rate														Picture Grade					
	Field	Frame	25 pps	12.5 pps	8.333 pps	6.25 pps	5 pps	4.167 pps	3.125 pps	2.5 pps	1 pps	0.5 pps	0.25 pps	0.125 pps	– – –	L6-34KB	L5-28KB	L4-22KB	L3-16KB	L2-10KB	L1-5KB
Camera number 1																					
Camera number 2																					
Camera number 3																					
Camera number 4																					
Camera number 5																					
Camera number 6																					
Camera number 7																					
Camera number 8																					
Camera number 9																					
Camera number 10																					
Camera number 11																					
Camera number 12																					
Camera number 13																					
Camera number 14																					
Camera number 15																					
Camera number 16																					

3 Alarm Recording Menu

	Frame / Field		Recording Rate														Picture Grade					
	Field	Frame	25 pps	12.5 pps	8.333 pps	6.25 pps	5 pps	4.167 pps	3.125 pps	2.5 pps	1 pps	0.5 pps	0.25 pps	0.125 pps	– – –	L6-34KB	L5-28KB	L4-22KB	L3-16KB	L2-10KB	L1-5KB
Camera number 1																					
Camera number 2																					
Camera number 3																					
Camera number 4																					
Camera number 5																					
Camera number 6																					
Camera number 7																					
Camera number 8																					
Camera number 9																					
Camera number 10																					
Camera number 11																					
Camera number 12																					
Camera number 13																					
Camera number 14																					
Camera number 15																					
Camera number 16																					

Setup Menu (200 000 000)

1 Recording (continued)

1 Set Recording Pattern A (Normal/Timer) * (continued)

3 Alarm Recording Menu (continued)

Motion Detection Recording	Alarm Mode	Pre-Alarm Duration																														Post-Alarm Duration																									
Alarm	Normal	Alarm Plus	Alarm CH	0 sec	1 sec	2 sec	3 sec	4 sec	5 sec	6 sec	7 sec	8 sec	9 sec	10 sec	15 sec	20 sec	30 sec	40 sec	50 sec	60 sec	90 sec	120 sec	150 sec	180 sec	2 sec	5 sec	10 sec	15 sec	30 sec	45 sec	1 min	2 min	5 min	10 min	15 min	20 min	30 min	60 min	Manual

4 Alarm Camera Setting

	Recording Camera															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Sensor number 1																
Sensor number 2																
Sensor number 3																
Sensor number 4																
Sensor number 5																
Sensor number 6																
Sensor number 7																
Sensor number 8																
Sensor number 9																
Sensor number 10																
Sensor number 11																
Sensor number 12																
Sensor number 13																
Sensor number 14																
Sensor number 15																
Sensor number 16																

5 Alarm Trigger In/Out

	Trigger								PTZ Camera Preset																
	External / MD-A	External / MD-B	External & MD-A	External & MD-B	External	MD-A	MD-B		Preset 1	Preset 2	Preset 3	Preset 4	Preset 5	Preset 6	Preset 7	Preset 8	Preset 9	Preset 10	Preset 11	Preset 12	Preset 13	Preset 14	Preset 15	Preset 16	– – –
Sensor number 1																									
Sensor number 2																									
Sensor number 3																									
Sensor number 4																									
Sensor number 5																									
Sensor number 6																									
Sensor number 7																									
Sensor number 8																									
Sensor number 9																									
Sensor number 10																									
Sensor number 11																									
Sensor number 12																									
Sensor number 13																									
Sensor number 14																									
Sensor number 15																									
Sensor number 16																									

Setup Menu (200 000 000)

1 Recording (continued)

2 Set Recording Pattern B (Timer) *

2 Normal Recording Menu

	Frame / Field		Recording Rate														Picture Grade					
	Field	Frame	25 pps	12.5 pps	8.333 pps	6.25 pps	5 pps	4.167 pps	3.125 pps	2.5 pps	1 pps	0.5 pps	0.25 pps	0.125 pps	_ _ _	L6-34KB	L5-28KB	L4-22KB	L3-16KB	L2-10KB	L1-5KB
Camera number 1																					
Camera number 2																					
Camera number 3																					
Camera number 4																					
Camera number 5																					
Camera number 6																					
Camera number 7																					
Camera number 8																					
Camera number 9																					
Camera number 10																					
Camera number 11																					
Camera number 12																					
Camera number 13																					
Camera number 14																					
Camera number 15																					
Camera number 16																					

3 Alarm Recording Menu

	Frame / Field		Recording Rate														Picture Grade					
	Field	Frame	25 pps	12.5 pps	8.333 pps	6.25 pps	5 pps	4.167 pps	3.125 pps	2.5 pps	1 pps	0.5 pps	0.25 pps	0.125 pps	_ _ _	L6-34KB	L5-28KB	L4-22KB	L3-16KB	L2-10KB	L1-5KB
Camera number 1																					
Camera number 2																					
Camera number 3																					
Camera number 4																					
Camera number 5																					
Camera number 6																					
Camera number 7																					
Camera number 8																					
Camera number 9																					
Camera number 10																					
Camera number 11																					
Camera number 12																					
Camera number 13																					
Camera number 14																					
Camera number 15																					
Camera number 16																					

Setup Menu (200 000 000)

1 Recording (continued)

2 Set Recording Pattern B (Timer) * (continued)

3 Alarm Recording Menu (continued)

Motion Detection Recording	Alarm Mode	Pre-Alarm Duration	Post-Alarm Duration
Alarm	Alarm Plus	0 sec	2 sec
Normal	Alarm CH	1 sec	5 sec
		2 sec	10 sec
		3 sec	15 sec
		4 sec	30 sec
		5 sec	45 sec
		6 sec	1 min
		7 sec	2 min
		8 sec	5 min
		9 sec	10 min
		10 sec	15 min
		15 sec	20 min
		20 sec	30 min
		30 sec	60 min
		40 sec	Manual
		50 sec	
		60 sec	
		90 sec	
		120 sec	
		150 sec	
		180 sec	

4 Alarm Camera Setting

	Recording Camera															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Sensor number 1																
Sensor number 2																
Sensor number 3																
Sensor number 4																
Sensor number 5																
Sensor number 6																
Sensor number 7																
Sensor number 8																
Sensor number 9																
Sensor number 10																
Sensor number 11																
Sensor number 12																
Sensor number 13																
Sensor number 14																
Sensor number 15																
Sensor number 16																

5 Alarm Trigger In/Out

	Trigger							PTZ Camera Preset																
	External / MD-A	External / MD-B	External & MD-A	External & MD-B	External	MD-A	MD-B	Preset 1	Preset 2	Preset 3	Preset 4	Preset 5	Preset 6	Preset 7	Preset 8	Preset 9	Preset 10	Preset 11	Preset 12	Preset 13	Preset 14	Preset 15	Preset 16	– – –
Sensor number 1																								
Sensor number 2																								
Sensor number 3																								
Sensor number 4																								
Sensor number 5																								
Sensor number 6																								
Sensor number 7																								
Sensor number 8																								
Sensor number 9																								
Sensor number 10																								
Sensor number 11																								
Sensor number 12																								
Sensor number 13																								
Sensor number 14																								
Sensor number 15																								
Sensor number 16																								

Setup Menu (200 000 000)

1 Recording (continued)

3 Set Recording Pattern C (Timer) *

2 Normal Recording Menu

	Frame / Field		Recording Rate														Picture Grade					
	Field	Frame	25 pps	12.5 pps	8.333 pps	6.25 pps	5 pps	4.167 pps	3.125 pps	2.5 pps	1 pps	0.5 pps	0.25 pps	0.125 pps	_ _ _	L6-34KB	L5-28KB	L4-22KB	L3-16KB	L2-10KB	L1-5KB
Camera number 1																					
Camera number 2																					
Camera number 3																					
Camera number 4																					
Camera number 5																					
Camera number 6																					
Camera number 7																					
Camera number 8																					
Camera number 9																					
Camera number 10																					
Camera number 11																					
Camera number 12																					
Camera number 13																					
Camera number 14																					
Camera number 15																					
Camera number 16																					

3 Alarm Recording Menu

	Frame / Field		Recording Rate														Picture Grade					
	Field	Frame	25 pps	12.5 pps	8.333 pps	6.25 pps	5 pps	4.167 pps	3.125 pps	2.5 pps	1 pps	0.5 pps	0.25 pps	0.125 pps	_ _ _	L6-34KB	L5-28KB	L4-22KB	L3-16KB	L2-10KB	L1-5KB
Camera number 1																					
Camera number 2																					
Camera number 3																					
Camera number 4																					
Camera number 5																					
Camera number 6																					
Camera number 7																					
Camera number 8																					
Camera number 9																					
Camera number 10																					
Camera number 11																					
Camera number 12																					
Camera number 13																					
Camera number 14																					
Camera number 15																					
Camera number 16																					

Setup Menu (200 000 000)

1 Recording (continued)

3 Set Recording Pattern C (Timer) * (continued)

3 Alarm Recording Menu (continued)

Motion Detection Recording	Alarm Mode	Pre-Alarm Duration																								Post-Alarm Duration												
Alarm	Normal	Alarm Plus	Alarm CH	0 sec	1 sec	2 sec	3 sec	4 sec	5 sec	6 sec	7 sec	8 sec	9 sec	10 sec	15 sec	20 sec	30 sec	40 sec	50 sec	60 sec	90 sec	120 sec	150 sec	180 sec	2 sec	5 sec	10 sec	15 sec	30 sec	45 sec	1 min	2 min	5 min	10 min	15 min	20 min	30 min	60 min	Manual

4 Alarm Camera Setting

	Recording Camera															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Sensor number 1																
Sensor number 2																
Sensor number 3																
Sensor number 4																
Sensor number 5																
Sensor number 6																
Sensor number 7																
Sensor number 8																
Sensor number 9																
Sensor number 10																
Sensor number 11																
Sensor number 12																
Sensor number 13																
Sensor number 14																
Sensor number 15																
Sensor number 16																

5 Alarm Trigger In/Out

	Trigger								PTZ Camera Preset																
	External / MD-A	External / MD-B	External & MD-A	External & MD-B	External	MD-A	MD-B		Preset 1	Preset 2	Preset 3	Preset 4	Preset 5	Preset 6	Preset 7	Preset 8	Preset 9	Preset 10	Preset 11	Preset 12	Preset 13	Preset 14	Preset 15	Preset 16	– – –
Sensor number 1																									
Sensor number 2																									
Sensor number 3																									
Sensor number 4																									
Sensor number 5																									
Sensor number 6																									
Sensor number 7																									
Sensor number 8																									
Sensor number 9																									
Sensor number 10																									
Sensor number 11																									
Sensor number 12																									
Sensor number 13																									
Sensor number 14																									
Sensor number 15																									
Sensor number 16																									

Setup Menu (200 000 000)

1 Recording (continued)

4 Set Recording Pattern D (Timer) *

2 Normal Recording Menu

	Frame / Field		Recording Rate														Picture Grade					
	Field	Frame	25 pps	12.5 pps	8.333 pps	6.25 pps	5 pps	4.167 pps	3.125 pps	2.5 pps	1 pps	0.5 pps	0.25 pps	0.125 pps	– – –	L6-34KB	L5-28KB	L4-22KB	L3-16KB	L2-10KB	L1-5KB
Camera number 1																					
Camera number 2																					
Camera number 3																					
Camera number 4																					
Camera number 5																					
Camera number 6																					
Camera number 7																					
Camera number 8																					
Camera number 9																					
Camera number 10																					
Camera number 11																					
Camera number 12																					
Camera number 13																					
Camera number 14																					
Camera number 15																					
Camera number 16																					

3 Alarm Recording Menu

	Frame / Field		Recording Rate														Picture Grade					
	Field	Frame	25 pps	12.5 pps	8.333 pps	6.25 pps	5 pps	4.167 pps	3.125 pps	2.5 pps	1 pps	0.5 pps	0.25 pps	0.125 pps	– – –	L6-34KB	L5-28KB	L4-22KB	L3-16KB	L2-10KB	L1-5KB
Camera number 1																					
Camera number 2																					
Camera number 3																					
Camera number 4																					
Camera number 5																					
Camera number 6																					
Camera number 7																					
Camera number 8																					
Camera number 9																					
Camera number 10																					
Camera number 11																					
Camera number 12																					
Camera number 13																					
Camera number 14																					
Camera number 15																					
Camera number 16																					

Setup Menu (200 000 000)

1 Recording (continued)

4 Set Recording Pattern D (Timer) * (continued)

3 Alarm Recording Menu (continued)

Motion Detection Recording	Alarm Mode	Pre-Alarm Duration	Post-Alarm Duration
Alarm	Alarm Plus	0 sec	2 sec
Normal	Alarm CH	1 sec	5 sec
		2 sec	10 sec
		3 sec	15 sec
		4 sec	30 sec
		5 sec	45 sec
		6 sec	1 min
		7 sec	2 min
		8 sec	5 min
		9 sec	10 min
		10 sec	15 min
		15 sec	20 min
		20 sec	30 min
		30 sec	60 min
		40 sec	Manual
		50 sec	
		60 sec	
		90 sec	
		120 sec	
		150 sec	
		180 sec	

4 Alarm Camera Setting

	Recording Camera															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Sensor number 1																
Sensor number 2																
Sensor number 3																
Sensor number 4																
Sensor number 5																
Sensor number 6																
Sensor number 7																
Sensor number 8																
Sensor number 9																
Sensor number 10																
Sensor number 11																
Sensor number 12																
Sensor number 13																
Sensor number 14																
Sensor number 15																
Sensor number 16																

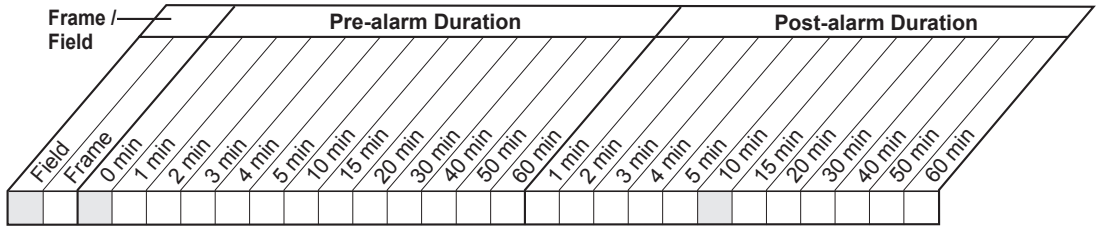
5 Alarm Trigger In/Out

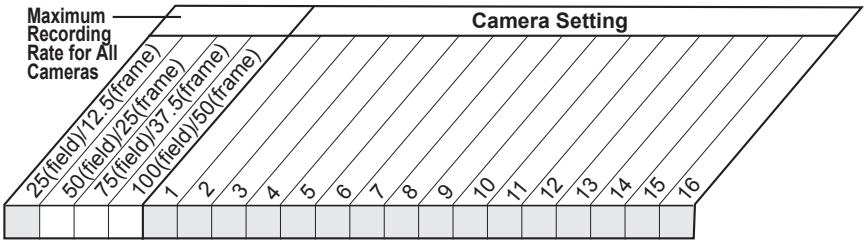
	Trigger							PTZ Camera Preset																	
	External / MD-A	External / MD-B	External & MD-A	External & MD-B	External	MD-A	MD-B	Preset 1	Preset 2	Preset 3	Preset 4	Preset 5	Preset 6	Preset 7	Preset 8	Preset 9	Preset 10	Preset 11	Preset 12	Preset 13	Preset 14	Preset 15	Preset 16	– – –
Sensor number 1																								
Sensor number 2																								
Sensor number 3																								
Sensor number 4																								
Sensor number 5																								
Sensor number 6																								
Sensor number 7																								
Sensor number 8																								
Sensor number 9																								
Sensor number 10																								
Sensor number 11																								
Sensor number 12																								
Sensor number 13																								
Sensor number 14																								
Sensor number 15																								
Sensor number 16																								

Setup Menu (200 000 000)

1 Recording (continued)

5 Emergency Recording Setup *





6 Audio Record Setup *

Audio Recording Mode ☐ Off ☐ Normal ☐ Alarm

2 Timer

2 Configure Timer Program 1 *

	Day of The Week											Time		Program Mode								Motion Detection	
	– –	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Everyday	Special	Holiday	Start	End	– –	Record A	Record B	Record C	Record D	Copy 2	Skip	– –	Active	Inactive	Special Day
1												[:]	[:]											[ ]
2												[:]	[:]											
3												[:]	[:]											[ ]
4												[:]	[:]											
5												[:]	[:]											
6												[:]	[:]											
7												[:]	[:]											
8												[:]	[:]											

3 Configure Timer Program 2 *

	Day of The Week											Time		Program Mode								Motion Detection	
	– –	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Everyday	Special	Holiday	Start	End	– –	Record A	Record B	Record C	Record D	Copy 2	Skip	– –	Active	Inactive	Special Day
1												[:]	[:]											[ ]
2												[:]	[:]											
3												[:]	[:]											[ ]
4												[:]	[:]											
5												[:]	[:]											
6												[:]	[:]											
7												[:]	[:]											
8												[:]	[:]											

Setup Menu(200 000 000)

2 Timer (continued)

4 Define Holidays *

(Day / Month)

3 Motion Det *

	1 Set Motion Detection Pattern A										2 Set Motion Detection Pattern B									
	Sensitivity					Motion Threshold (1 to 506) (default setting is 5)	Reference Interval				Sensitivity					Motion Threshold (1 to 506) (default setting is 5)	Reference Interval			
	Low	Mid Low	Mid	Mid High	High		0.25 sec	0.5 sec	1 sec	2 sec	Low	Mid Low	Mid	Mid High	High		0.25 sec	0.5 sec	1 sec	2 sec
Camera number 1						[ ]										[ ]				
Camera number 2						[ ]										[ ]				
Camera number 3						[ ]										[ ]				
Camera number 4						[ ]										[ ]				
Camera number 5						[ ]										[ ]				
Camera number 6						[ ]										[ ]				
Camera number 7						[ ]										[ ]				
Camera number 8						[ ]										[ ]				
Camera number 9						[ ]										[ ]				
Camera number 10						[ ]										[ ]				
Camera number 11						[ ]										[ ]				
Camera number 12						[ ]										[ ]				
Camera number 13						[ ]										[ ]				
Camera number 14						[ ]										[ ]				
Camera number 15						[ ]										[ ]				
Camera number 16						[ ]										[ ]				

4 System

2 Menu Language Selection *

☐ENGLISH ☐DEUTSCH ☐FRANÇAIS ☐ITALIANO ☐ESPAÑOL ☐РУССКИЙ

3 Rear Terminal Setting *

	1 Mode Out Settings																			
	Mode Out 1 to 4										Low Memory Alarm Setting									
	Trigger								Polarity		Device				Low Memory					
	Off	Recording	Playing	Low Memory	Power	Alarm	LAN	Open	Close	Off	Main-Normal	Main-Alarm	Main-LPA	Copy 2	2 %	4 %	6 %	8 %	10 %	15 %	20 %	30 %	40 %	50 %
Mode Out 1																								
Mode Out 2																								
Mode Out 3																								
Mode Out 4																								

Setup Menu(200 000 000)

4 System (continued)

3 Rear Terminal Setting * (continued)

	2 Call Out Settings												3 Key Sound		4 Buzzer			
	Off	0 %	2 %	4 %	6 %	8 %	10 %	15 %	20 %	30 %	40 %	50 %	On	Off	Off	Remain	Warning	Alarm	LAN
Normal Recording Area																			
Alarm Recording Area																			
LPA Recording Area																			
Copy 2																			

4 Password Setting

Operation Control Password			Disk Management Password
Level 1	Level 2	Level 3	
[ ]	[ ]	[ ]	[ ]

5 Multiplexer Setting *

1 Output A Settings

Split 4 screen								Split 9 screen					
4a		4b		4c		4d		9a			9b		
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
								[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

1 Output A Settings (continued)

Split 10 screen				Split 13 screen								Split 16 screen			
10a		10b		13a				13b							
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
				[ ]			[ ]	[ ]			[ ]	[ ]	[ ]	[ ]	[ ]
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

1 Output A Settings (continued)

Sequence Single	Sequence Multi									
	Split 4				Split 9		Split 10		Split 13	
	abcd	abc	ab	a	ab	a	ab	a	ab	a
[ ] → [ ] → [ ] → [ ] → [ ] → [ ] → [ ] → [ ] →										
[ ] → [ ] → [ ] → [ ] → [ ] → [ ] → [ ] → [ ]										

1 Output A Settings (continued)

Sequence Time																													
1 s	2 s	3 s	4 s	5 s	6 s	7 s	8 s	9 s	10 s	11 s	12 s	13 s	14 s	15 s	16 s	17 s	18 s	19 s	20 s	21 s	22 s	23 s	24 s	25 s	26 s	27 s	28 s	29 s	30 s

Setup Menu (200 000 000)

4 System (continued)

5 Multiplexer Setting * (continued)

2 Output B Settings

Split 4 screen: 4a, 4b, 4c, 4d

Split 9 screen: 9a, 9b

2 Output B Settings (continued)

Split 10 screen: 10a, 10b

Split 13 screen: 13a, 13b

Split 16 screen

2 Output B Settings (continued)

Sequence Single

Sequence Multi: Split 4 (abcd, abc, ab, a), Split 9 (ab, a), Split 10 (ab, a), Split 13 (ab, a)

2 Output B Settings (continued)

Sequence Time: 1 s, 2 s, 3 s, 4 s, 5 s, 6 s, 7 s, 8 s, 9 s, 10 s, 11 s, 12 s, 13 s, 14 s, 15 s, 16 s, 17 s, 18 s, 19 s, 20 s, 21 s, 22 s, 23 s, 24 s, 25 s, 26 s, 27 s, 28 s, 29 s, 30 s

4 Alarm Display Setting *

Output Setting ☐ Off ☐ Output A ☐ Output B

	Camera 1	Camera 2	Camera 3	Camera 4	Camera 5	Camera 6	Camera 7	Camera 8	Camera 9	Camera 10	Camera 11	Camera 12	Camera 13	Camera 14	Camera 15	Camera 16	Multi 4a	Multi 4b	Multi 4c	Multi 4d	Multi 9a	Multi 9b	Multi 10a	Multi 10b	Multi 13a	Multi 13b	Multi 16
Sensor 1																											
Sensor 2																											
Sensor 3																											
Sensor 4																											
Sensor 5																											
Sensor 6																											
Sensor 7																											
Sensor 8																											
Sensor 9																											
Sensor 10																											
Sensor 11																											
Sensor 12																											
Sensor 13																											
Sensor 14																											
Sensor 15																											
Sensor 16																											

Setup Menu (200 000 000)

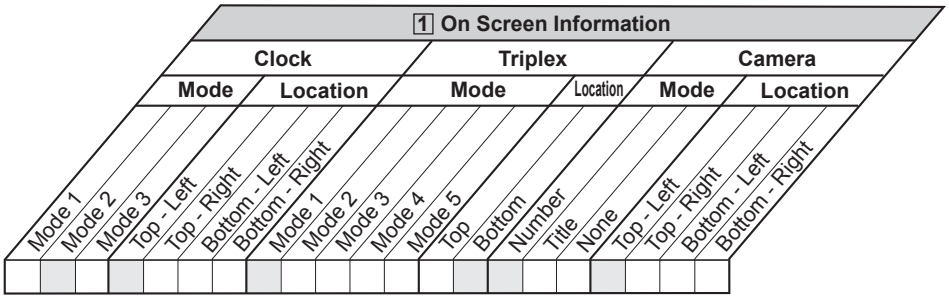
4 System (continued)

5 Multiplexer Setting * (continued)

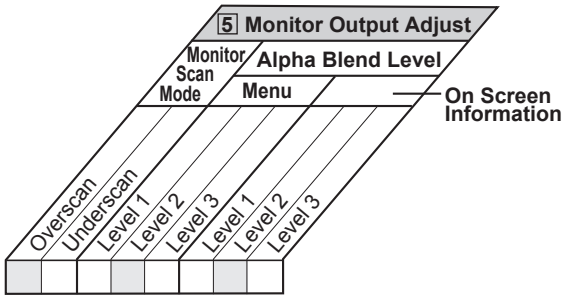
5 Covert Camera Setting

	On	Off
CH 1		
CH 2		
CH 3		
CH 4		
CH 5		
CH 6		
CH 7		
CH 8		
CH 9		
CH 10		
CH 11		
CH 12		
CH 13		
CH 14		
CH 15		
CH 16		

6 On Screen Display Setting *



	2 Camera Title
Camera number 1	[ ]
Camera number 2	[ ]
Camera number 3	[ ]
Camera number 4	[ ]
Camera number 5	[ ]
Camera number 6	[ ]
Camera number 7	[ ]
Camera number 8	[ ]
Camera number 9	[ ]
Camera number 10	[ ]
Camera number 11	[ ]
Camera number 12	[ ]
Camera number 13	[ ]
Camera number 14	[ ]
Camera number 15	[ ]
Camera number 16	[ ]

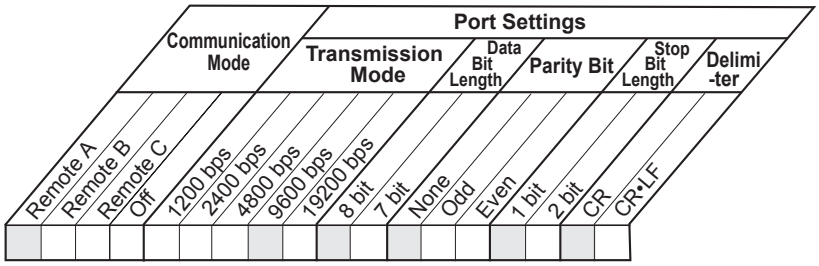


	4 Recorder Title
Display Mode	☐ On ☐ Off
Recorder Title	[ ]

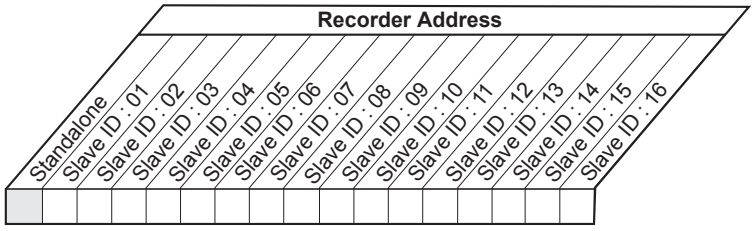
System Menu (300 000 000)

1 COM/LAN

1 RS-232C Setting *



2 RS-485 Setting *



3 LAN (Communication) Setting *

IP Address		192.168.000.100
Sub Net Mask		255.255.255.000
Gateway		000.000.000.000
Web		00080
User Access		53705
Administrator		53706

2 PTZ Setting

1 PTZ Camera Configuration *

	Device	Port: RS-232C	Port: RS-422/485	Device ID	Pan Reverse: Invalid	Pan Reverse: Valid	Tilt Reverse: Invalid	Tilt Reverse: Valid
Camera number 1	[ ]			[ ]				
Camera number 2	[ ]			[ ]				
Camera number 3	[ ]			[ ]				
Camera number 4	[ ]			[ ]				
Camera number 5	[ ]			[ ]				
Camera number 6	[ ]			[ ]				
Camera number 7	[ ]			[ ]				
Camera number 8	[ ]			[ ]				
Camera number 9	[ ]			[ ]				
Camera number 10	[ ]			[ ]				
Camera number 11	[ ]			[ ]				
Camera number 12	[ ]			[ ]				
Camera number 13	[ ]			[ ]				
Camera number 14	[ ]			[ ]				
Camera number 15	[ ]			[ ]				
Camera number 16	[ ]			[ ]				

System Menu (300 000 000)

5 Memory

1 Add/Remove HDD Device

Main device

1 Internal HDD
[ ]
[ ]
2 External HDD (USB HDD)
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Copy 1 device

Serial bus group	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
DVD/CD	[ ]
USB memory	[ ]

Copy 2 device

Internal HDD group	[ ]
	[ ]
Serial bus group	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
	[ ]
DVD/CD	

2 Add/Remove DVD/CD Drive

Select using for Copy1 or Copy2 ☐ Copy1 ☐ Copy2

System Menu (300 000 000)

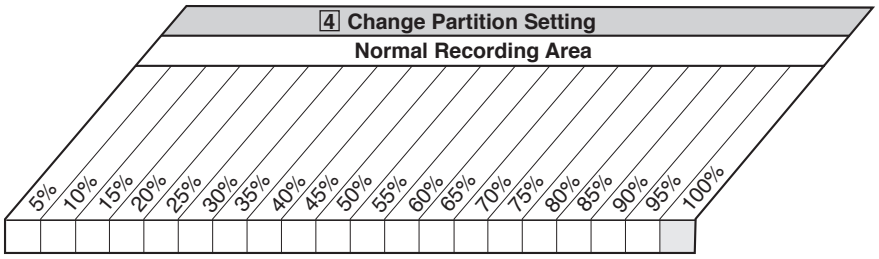
5 Memory (continued)

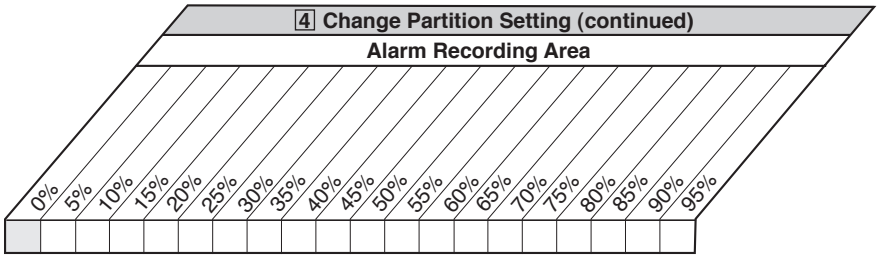
3 Data Management Setting for Main Memory

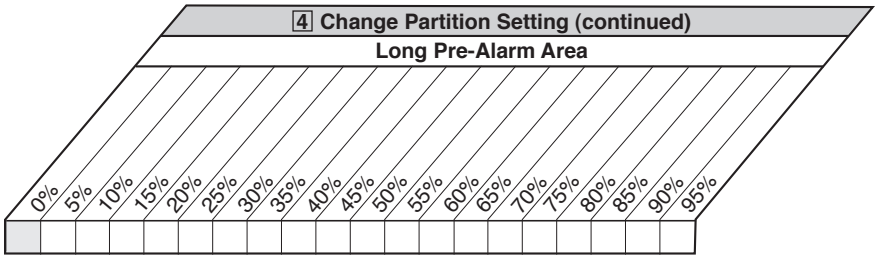
Repeat of Normal Recording Area * ☑ Repeat On ☐ Repeat Off

Repeat of Alarm Recording Area * ☐ Repeat On ☑ Repeat Off

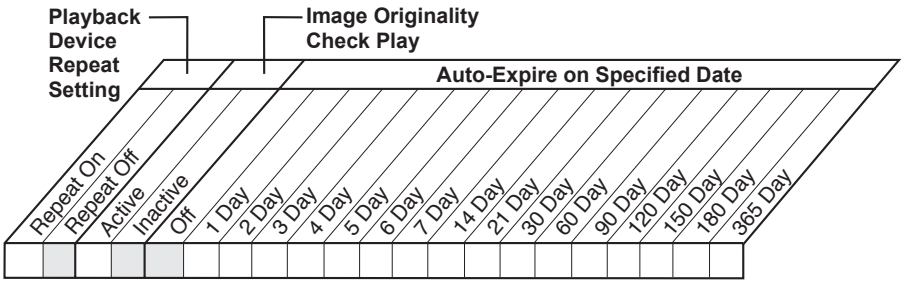
Repeat of LPA Recording Area * ☐ Repeat On ☑ Repeat Off







4 Recording Data Readout Setting *



Glossary

Auto PAN

When a camera is set to this mode, it automatically turns between two preset positions horizontally. The availability of this function depends on the specifications of the connected camera.

Serial bus

This interface is only for connecting a Mouse, USB-Memories and External HD-Drives that are equipped USB interface. Some of the devices available in the market might be incompatible with the recorder.

Emergency REC

This is a function to record a picture prior to others by using the external switches connected to this unit when an emergency event occurs. Pictures are recorded with the best picture quality and the specified capture rate (depending on number of recording cameras).

Bookmark Search

This is a function to search the desired picture with a bookmark registered by the bookmark function.

PTZ

PTZ means Pan, Tilt and Zoom. PTZ Cameras has a function to change the direction by external controls.

Timer Recording

This is a function to record a picture by time schedule. Different number of the recording cameras, picture quality and recording rate for each camera and motion detection On/Off can be set to each schedule.

Motion Detection Playback Search

This is a function to automatically search a recorded picture by detecting motion in the selected detection area. Setting the detection area for searching is required before activating this function.

DVD (Digital Versatile Disc)

DVD is an optical disc storage media format that is used for recording or playback of pictures with high video and sound quality and for storing data. A DVD disc is similar in appearance to a compact disc.

LPA (Long Pre-Alarm)

This is a function to record a picture at maximum of 60 minutes before starting emergency recording.

CALL OUT

This is isolated output terminal, and it outputs signal when system has a problem or information of the status.

MODE OUT

This is contact output terminal, and it outputs operation modes of the recorder. The status of this terminal can be monitored via network.

Triplex

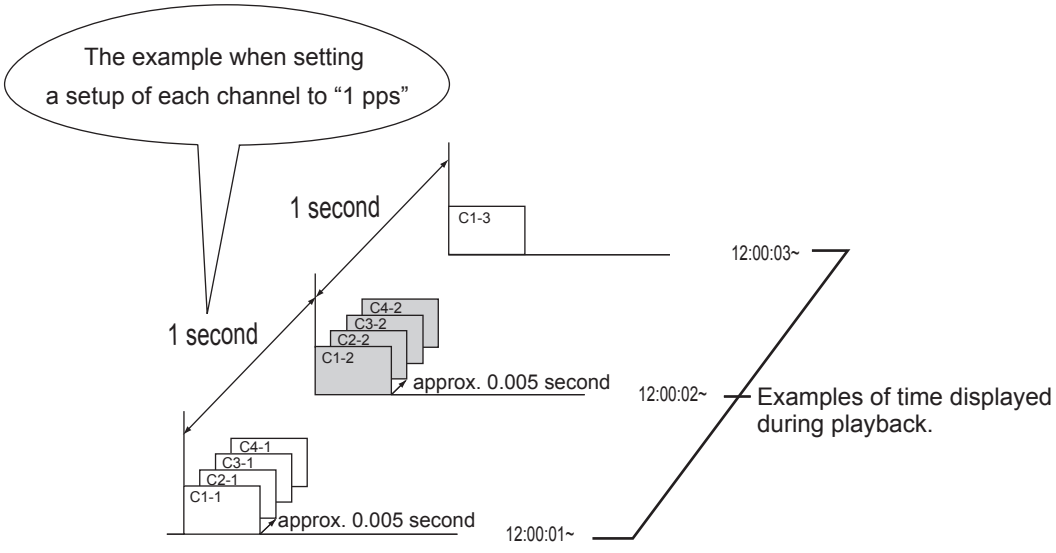
User can view live and playback pictures on the same monitor in all screen multi-split layouts without disrupting recording.

Covert Camera

It is possible to hide pictures of selected cameras that are installed in sensitive areas and should only be viewed by authorized person. It can be switched by <Multiplexer Setting>.

Relation of recording operation to the number of cameras and recording rate settings

The recording pattern of this unit is as illustrated in the diagram below. Picture data input from all the connected cameras is recorded sequentially. (Approx. every 0.005 second during normal recording.)



Specifications

Rated Power Supply.....100 to 240 V AC, 50/60 Hz
Rated Input.....0.9- 0.4 A (100-240 V)
Colour System.....PAL-type colour system.

Operating Temperature.....41 °F-104 °F (5 °C to 40 °C)
Relative Humidity .....Max. 80 (%)
Altitude .....Max. 2000 (m)
Dimensions.....425 (Width) x 375 (Depth) x 133 (Height) (mm)
Weigh .....9.8 kg (when 1 HDD is attached)
Recording System .....Digital recording system
  Sampling .....13.5 MHz
  Data Compression JPEG2000
  Compression Unit.....Frame, Field
Recording Resolution .....720 x 576, 720 X 288
Recording Device .....Hard disk drive (HDD)

Video Input .....16 Input BNC-Connectors: 1.0 V(p-p), 75 ohms.
Monitor Output.....S-Connector: Y-Signal: 1.0 V(p-p), 75 ohms.
C-Signal: 0.3 V(p-p), 75 ohms.
2 Output BNC-Connectors: 1.0 V(p-p), 75 ohms.
RCA-jack: 1.0 V(p-p), 75 ohms.
Throughout Output .....16 Output BNC-Connectors: 1.0 V(p-p), 75 ohms.

Audio Input .....RCA-Jack: 308 mV(rms), 50 k ohms.
Audio Output .....RCA-Jack: 308 mV(rms), 1 k ohms.

Clock .....±20 seconds/month (when power is supplied, 25 °C)

Timer Program.....8 programs-Daily start and stop time for one week x 2 set
Memory Backup .....Lasts for more than 1 month (when fully charged)

Connectors
  External storage terminal ...Serial bus (1-4) (For connecting the recommended optional items only)
  Control terminals
    Clock adjust Input .....Active: When terminals are short-circuited or “Low” Level voltage is applied.
    Non active: Open.
    Clock adjust Output.....Active: “Low” Level Max. Drive current 30 mA DC.
    Non active: Open. Max. Voltage 24 V DC.
    (Clock adjust Output is throughout of Clock adjust Input)
    Recording start Input....Active: When terminals are short-circuited or “Low” Level voltage is applied.
    Non active: Open.
    Recording stop Input....Active: When terminals are short-circuited or “Low” Level voltage is applied.
    Non active: Open.
    Emergency Input.....Active: When terminals are short-circuited or “Low” Level voltage is applied.
    Non active: Open.
    Mode out (1-4) .....Active: “Low” Level Max. Drive current 30 mA DC.
    Non active: Open. Max. Voltage 24 V DC.
    Call out +/–.....Active: Short Max. Drive current 7 mA DC.
    (Photo coupler output) Non active: Open. Max. Voltage 24 V DC.
    Ground terminal
    DC 12 V Output.....Max. 350 mA DC (when Main switch and power button is turned on)
    Alarm Input (1-16).....Active: When terminals are short-circuited or “Low” Level voltage is applied.
    Non active: Open.
    Alarm Output (1-16) .....Active: “Low” Level Max. Drive current 30 mA DC.
    Non active: Open. Max. Voltage 24 V DC.
    PTZ terminal .....RS-232C terminal
    RS-422 terminal
    Serial port.....RS-232C D-SUB 9 pin
    RS-485 port.....RS-485 Input/Output, RJ-11
  Communication
    LAN .....Connector form: RJ-45 Physical interface: 10BASE-T/100BASE-TX

DVD-R/RW, CD-R/RW recording format .....Original format

Accessories	AC power cord (For U.K/for the Continent)	2
	CD	1
	Cable clamping band	2
	Installer’s manual (this manual)	1
	User’s manual	1

Weight and dimensions shown are approximate.
Design and specifications are subject to change without notice.

This unit complies with the European EMC test standard EN50130-4.

PORTUGES

OBJETOS PESADOS NUNCA DEVEM SER COLOCADOS EM CIMA DO APARELHO (POR EX., TV)

NÃO MEXA DENTRO DO APARELHO NEM INSIRA NELE QUALQUER OBJETO
Tocar no interior do gabinete ou introduzir objetos estranhos através do slot de carregamento de disco para orifício de ventilação, além de causar perigos de seguranças poderão causar danos extensivos.

PROTEJA O FIO DE ELETRICIDADE
O fio de eletricidade danificado pode provocar incêndio ou choques. Se o cabo principal estiver danificado, desligue a rede elétrica e retire com cuidado o fio da tomada da parede.
Se esta unidade for movida sobre a condição power on, o HDD incorporado poderá danificar-se. Para mover a unidade, certifique-se de que tenha passado mais de 1 minuto após a desconexão do cabo de alimentação e cabos de conexões. Certifique-se de remover o disco e feche a abertura do slot de carregamento de disco.

DESCONECTE O FIO DE ELETRICIDADE DURANTE UMA LONGA AUSÊNCIA
Desligue a eletricidade e desconecte o fio de eletricidade durante uma longa ausência.

MANTENHA UMA BOA VENTILAÇÃO
Não obstrua os vários orifícios de ventilação do aparelho. Para uma ventilação máxima, deixe algum espaço em volta do aparelho e o coloque somente numa superfície plana e dura, certificando-se de que não fique coberto durante o uso. Objetos pesados nunca devem ser colocados em cima do aparelho.

QUANDO NÃO ESTIVER SENDO USADO
Quando não estiver em uso, sempre ejete o disco e DESLIGUE o interruptor PRINCIPAL.

CUIDADOS COM O GABINETE
Não use nunca limpadores à base de petróleo. Limpe com um pano macio umedecido com água e sabão e esfregue até secar. Os cabos de PVC ou de chumbo não devem ficar em contato com a superfície do gabinete por longos períodos de tempo.

LOCAL PARA INSTALAÇÃO
Para um ótimo desempenho e uma fidedignidade duradoura, instale o aparelho num local:
1. Bem ventilado, longe da luz direta do sol e distante de fontes diretas de calor.
2. Numa superfície sólida livre de vibrações.
3. Livre de grande umidade, poeira excessiva e longe de campos magnéticos.
4. Certifique-se que o ventilador localizado na parte de trás do painel do aparelho não esteja bloqueado.

LOCAIS NÃO APROPRIADOS
A colocação do aparelho nos seguintes locais pode encurtar a vida útil do produto:
- Locais extremamente frios, como depósitos refrigerados e frigoríficos.
- Locais onde se pode gerar quantidades excessivas de sulfito de hidrogênio, como por exemplo áreas de estações hidrotermais.
- Locais de atmosfera salina.

ESTE EQUIPAMENTO NÃO DISPÕE DE LIGAÇÃO PARA UTILIZAÇÃO COM SISTEMAS AO AR LIVRE OU SISTEMAS DE DISTRIBUIÇÃO POR CABO.

NENHUM OBJETO COM LÍQUIDOS, TAIS COMO VASOS, DEVERÃO SER COLOCADOS SOBRE O APARELHO.
NÃO COLOQUE OBJETOS PESADOS SOBRE A UNIDADE.
NÃO PISE A UNIDADE.
NÃO COLOQUE NENHUM OBJETO EM FRENTE DO SLOT DE CARREGAMENTO DE DISCO.
A unidade poderá cair ou inclinar-se devido à perda do equilíbrio, podendo causar ferimentos ou falhas.

AVISO: PARA EVITAR INCÊNDIO OU RISCO DE CHOQUES, NÃO EXPONHA ESTE APARELHO À CHUVA OU UMIDADE. ESTE APARELHO DEVE TER LIGADO À TERRA.

Este aparelho cumpre os requisitos da Diretriz EC 2004/108/CE, “Diretriz EMC”, e 2006/95/CE, “Diretriz sobre Baixa Voltagem”. Foram observados os requisitos de susceptibilidade de acordo com EN 55024 e os de interferência, segundo EN 55022 para a operação em áreas residenciais, comerciais, locais de indústrias leves e de empresas de pequeno porte, tanto dentro como fora dos prédios. Todos os locais de operação são caracterizados pela sua conexão ao sistema público de abastecimento de eletricidade de baixa voltagem. Este aparelho foi fabricado de acordo com EN 60950-1.

O seu produto MITSUBISHI ELECTRIC foi concebido e produzido com materiais e componentes de alta qualidade que podem ser reciclados e reutilizados.
Este símbolo significa que o equipamento eléctrico e electrónico no final da sua vida útil deve ser deitado fora separadamente do lixo doméstico.
Por favor, entregue este equipamento no seu ponto local de recolha/reciclagem.
Na União Europeia existem sistemas de recolha separados para produtos eléctricos e electrónicos usados.
Por favor, ajude-nos a conservar o ambiente em que vivemos!

Aviso sobre a construção do sistema de vigilância desta unidade

- Esta unidade poderá ser controlada pelos dispositivos externos, através do terminal RS-232C ou terminal LAN. Esta unidade também poderá ser usada para controlar os dispositivos externos através do terminal externo, terminal RS-422/485 ou RS-232C. Graças a estas funções, esta unidade pode ser usada com flexibilidade num sistema de segurança de alto nível, mas o inteiro sistema de vigilância pode ser afetado pelo mau funcionamento desta unidade ou dos dispositivos externos, dependendo do conteúdo da configuração desta unidade ou da conexão ou combinação entre os dispositivos externos.
- Ao configurar um sistema de vigilância utilizando esta unidade, recomendamos que confirme primeiro que esta unidade esteja funcionando normalmente com os outros dispositivos conectados ou combinados.
- Recomendamos que copie ou faça um backup dos dados gravados importantes para os outros dispositivos periodicamente.
- Danos decorrentes de qualquer erro operacional do sistema de vigilância ou perda dos dados gravados, ou quaisquer outros danos devido a um mau funcionamento desta unidade não são cobertos pela garantia.
- Não use a função de notificação desta unidade para fazer avaliações importantes nem para qualquer fim relacionado com vidas humanas.
- Quando esta unidade não conseguir reconhecer o dispositivo externo que está a ser usado para gravação devido a uma falha de corrente, baixa voltagem ou outras falhas, o ponto de gravação pode ser deslocado para o disco rígido interno desta unidade ou outro disco rígido externo. Para evitar a ocorrência de tal problema, recomenda-se o uso de um UPS.
- Se a ficha estiver desligada, ou o botão disjuntor for desligado durante a gravação, o HDD pode ficar danificado, ou poderá não conseguir reproduzir os dados gravados.
  Se o botão disjuntor for ligado e desligado todos os dias, configure o temporizador de gravação para que isso seja feito apenas durante o período em que o botão disjuntor esteja ligado e não o desligue durante a gravação.

Podem ocorrer casos em que a função integrada de MOTION DETECTION (DETECÇÃO DE MOVIMENTO) não funcione corretamente devido a condições externas ou sinais de entrada de vídeo, entre outros fatores.

O usuário não será indenizado por problemas (ex., falha na gravação ou na reprodução) que ocorram tanto com o aparelho ou com um dispositivo conectado a ele durante a operação. Recomenda-se fazer regularmente cópias-reserva de gravações importantes, como precaução contra possíveis panes ou acidentes.

Tempo de gravação e garantia do produto

O tempo de gravação contínua e a exibição do tempo estimado na tela do menu correspondem ao tempo de gravação contínua durante o funcionamento desta unidade, não ao período de garantia do produto. Tampouco correspondem ao período de garantia de funcionamento das peças usadas.

- Esta unidade incorpora um disco rígido incorporado, que é um dispositivo de precisão. É portanto necessário ter bastante cuidado ao manusear a unidade.
- Não submeta esta unidade a vibrações ou choques. É necessário ter bastante cuidado na prevenção de vibrações ou choques, que poderiam causar danos, principalmente quando se liga a unidade ou durante o acesso ao disco rígido.
- Não desligue o fio da tomada elétrica quando a unidade estiver ligada ou durante qualquer gravação ou reprodução.
- Para uma detecção imediata de falhas, recomenda-se a realização de uma inspeção regular a cada ano.

O disco rígido e a ventoinha de arrefecimento desta unidade são peças móveis. Para uma gravação estável, recomenda-se que ambas estas peças sejam substituídas ao fim de 30000 horas.
(Este intervalo serve apenas de referência e não representa o tempo de garantia das peças.)

ISENÇÃO DE RESPONSABILIDADE

Em qualquer caso, a Mitsubishi não assume qualquer responsabilidade ou garantia sobre o seguinte:

1. Desmontagem, reparação, ou alteração desta unidade pelo utilizador ou instalador.
2. Falha ou avaria ou danos nesta unidade resultantes de uso impróprio ou negligente manuseamento pelo utilizador ou instalador.
3. Inconveniência ou danos resultantes da incapacidade para apresentar ou gravar imagens devido a qualquer razão ou causa excepto avaria ou falha desta unidade.
4. Falha desta unidade devido à combinação com outros equipamentos fabricados por terceiros, ou inconveniência ou danos resultantes de tais falhas.
5. Inconveniência, danos ou reclamações resultantes da avaria desta unidade ou perda de dados vídeo gravados devido à substituição do disco rígido incorporado pelo utilizador ou instalador.
6. Inconveniência ou danos resultantes da avaria desta unidade ou inabilidade para apresentar ou gravar imagens devido a desastres naturais incluindo tremores de terra e tempestades.
7. Inconveniência, danos ou reclamações resultantes da avaria desta unidade ou perda de dados vídeo gravados devido ao impacto ou vibração do disco rígido incorporado ou a um factor ambiental tal como temperatura no local da instalação.
8. Pedido de indemnização por danos ou outra reclamação por violação de privacidade se as imagens monitoradas ou gravadas pelo utilizador se tornarem públicas ou forem usadas para qualquer objectivo diferente da vigilância por qualquer razão.

POSIÇÃO DA INSTALAÇÃO E MANUSEIO

- Coloque esta unidade em um lugar horizontal e estável. Se esta unidade for usada em um lugar instável, poderá danificar-se, por exemplo no ato da remoção do disco DVD/CD.
- Não coloque esta unidade próxima de outros equipamentos. O equipamento e a unidade poderão influenciar-se um ao outro causando distorções de imagens e de áudio.
- Quando um monitor e esta unidade forem colocados verticalmente, as imagens poderão distorcer-se ou o disco DVD/CD não poderá ser ejetado.
- Não coloque a sua mão no slot de carregamento de disco. Poderá prendê-la no slot causando ferimentos. Se a sua mão prender-se, não tente retirá-la do slot à força. Avise o seu revendedor após desligá-la e desconectar o plug da tomada.

DISCO DVD/CD

- Não use disco rachado, deformado ou reparado com adesivos. O disco poderá voar-se e causar ferimentos.
- Não toque na superfície espelhada do disco quando estiver segurando-o.
- Em caso de acúmulos de líquidos de condensação na superfície do disco, remova-os antes do uso.
- As marcas de dedos ou sujeiras poderão causar deterioração da qualidade de imagem ou do áudio. Limpe o disco DVD/CD delicadamente com um pano macio, de centro para fora.
- Se o disco estiver extremamente sujo, remova a sujeira levemente com um pano umedecido com água e em seguida limpe-o com um pano seco e macio.
- Não use solvente, como benzina ou diluidor; cleaner de fitas e anti-estáticos. Estes produtos poderão danificar o disco.
- Não utilize os discos descritos abaixo. Tais discos poderão danificar-se ou causar danos à unidade.
  Disco com pedaços de papéis ou etiquetas coladas ou discos quebrados.
  Discos com etiquetas descoladas ou disco sujo.
  Disco rachado, danificado ou reparado com adesivos.
- Guarde o disco na embalagem própria, evitando os seguintes lugares.
  Lugares sujeitos à luz solar.
  Lugares excessivamente sujos.
  Lugares sujeitos à alta temperatura ou umidade.
- Os softwares de filmes do mercado ou imagens privadas não podem ser reproduzidos nesta unidade. Somente a imagem gravada nesta unidade poderá ser reproduzida.
- Não use discos que tenham sido usados no PC, que tenham falhado ao tentar copiar, ou parado durante a cópia devido a corte de corrente, pois estes poderão provocar avarias na unidade.
- Ainda que possa copiar os dados em DVD/CD com esta unidade e reproduzi-los no computador utilizando o software fornecido, nem todos os computadores ou leitores de DVD/CD garantem uma reprodução correcta desses dados.

MANUNTENÇÃO DA LENTE PARA GRAVAÇÃO E REPRODUÇÃO (LASER PICKUP)

- Em caso de adesão de poeiras sobre a lente para gravação ou reprodução, a imagem poderá distorcer-se ou o áudio poderá falhar-se, impossibilitando a gravação/reprodução normal. Consulte o seu revendedor para a limpeza.
  O disco de limpeza de lente comercializado poderá danificar a lente. Portanto, não use-o.

PRECAUÇÃO RELATIVA AO DISPOSITIVO EXTERNO

- Os diversos HDDs externos podem ser ligados a esta unidade para expandir a memória ou para serem usados como dispositivo de cópia.
  No entanto, ao gravar ou reproduzir uma imagem a uma taxa elevada, algumas imagens podem ser saltadas devido à baixa taxa de transferência ou resposta de dados do dispositivo externo ligado. Verifique o funcionamento com antecedência.
- Não use a função de controlo de potência do dispositivo externo que usa potência do barramento desta unidade.
- O dispositivo externo a ser usado pode não ser apropriado para a operação que pretende definir. Recomenda-se que consulte o seu revendedor quando usar o dispositivo externo.

Aviso
Este é um produto de classe A. Num ambiente doméstico, este produto poderá provocar interferência rádio e nesse caso o utilizador poderá ter de tomar as medidas apropriadas.

PRODUTO LASER DE CLASSE 1

SVENSKA

TUNGA FÖREMÅL (T EX EN TV) FÅR ABSOLUT INTE PLACERAS OVANPÅ ENHETEN

RÖR INTE VID INSIDAN AV ENHETEN OCH STOPPA INTE IN NÅGRA FÖREMÅL I ENHETEN
Vidröring inuti lådan eller införsel av främmande föremål av något slag genom diskinmatningsluckan eller ventilationshålen inte bara utgör en säkerhetsrisk utan kan även orsaka omfattande skada.

SKYDDA STRÖMKABELN
Skador på strömkabeln kan orsaka brand eller elstötar. Om strömkabeln är skadad ska du slå av huvudströmmen och försiktigt koppla loss kabeln genom att hålla i kontakten.
Om denna enhet flyttas med strömmen på kan den inbyggda hårddisken skadas. Kontrollera att mer än en minut har passerat efter det att nätkabeln och anslutningskablarna kopplats ur innan flytt av enheten. Se till att ta ur disken och stänga diskinmatningsluckan.

STÄNG AV STRÖMMEN NÄR ENHETEN INTE SKA ANVÄNDAS UNDER EN LÄNGRE TID
Stäng av strömmen och dra ut kontakten när enheten inte ska användas under en längre tid.

SÖRJ FÖR GOD VENTILATION
Se till att de många ventilationshålen på enheten inte blockeras. För maximal ventilation ska du lämna fritt utrymme runt enheten och endast placera enheten på en stadig och jämn yta, samt se till att enheten inte täcks över när den används. Inga tunga föremål får placeras ovanpå enheten.

NÄR ENHETEN INTE ANVÄNDS
När enheten inte används, ta alltid ur disken och stäng AV huvudströmbrytaren.

UNDERHÅLL AV SKÅP
Använd aldrig rengöringsmedel som innehåller petroleum. Torka av skåpet med en mjuk tygtrasa som fuktats lätt med tvål och vatten. Torka av PVC-kablar och sladdar som inte bör tillåtas komma i kontakt med skåphöljet under längre perioder.

INSTALLATIONSPLATS
För bästa prestanda och varaktig driftssäkerhet bör du installera enheten på en plats som:
1. Är välventilerad och inte utsätts för direkt solljus eller en direkt värmekälla.
2. Erbjuder en stabil, vibrationsfri yta.
3. Är fri från hög luftfuktighet, stora mängder damm samt magnetfält.
4. Kontrollera att ventilationsfläkten som sitter på enhetens bakre panel inte blockeras.

OLÄMPLIGA INSTALLATIONSPLATSER
Om du placerar enheten på följande platser kan dess livstid förkortas:
- Extremt kalla platser, t ex kylda magasin och fryshus.
- Platser där stora mängder svavelväte bildas, t ex trakter med heta källor.
- Platser eller områden där luften innehåller saltvatten.

DENNA UTRUSTNING HAR INGEN ANSLUTNING FÖR ANVÄNDNING TILLSAMMANS MED FÖRDELNINGSNÄT ELLER KABEL-TV-SYSTEM.

INGA VÄTSKEFYLLDA OBJEKT, SÅ SOM VASER, FÅR PLACERAS PÅ APPARATEN.
PLACERA INTE TUNGA OBJEKT PÅ OVANPÅ DENNA ENHET.
TRAMPA INTE PÅ DENNA ENHET.
PLACERA INGA FÖREMÅL FRAMFÖR DISKINMATNINGSLUCKAN.
Enheten kan trilla eller falla genom att tappa balansen. Detta kan orsaka skada eller felaktigheter på enheten.

VARNING: FÖR ATT UNDVIKA BRAND ELLER ELSTÖTAR, FÅR DENNA APPARAT INTE UTSÄTTAS FÖR REGN ELLER FUKT. APPARATEN MÅSTE JORDAS.

Denna apparat uppfyller kraven angivna i EC-direktivet 2004/108/EG, “EMC Directive” och 2006/95/EG, “Low Voltage Directive”. Kraven om frekveneskanslighet enligt EN 55024 och kraven om storningar enligt EN 55022 ar iakttagna for anvandning pa bostadsomraden, affarsomraden, lattindustrifastigheter samt inom sma foretag saval innanfor som utanfor byggnader. Pa samtliga anvandningaplatser for denna apparat skall vara det allmanna lagspanningsnatet tillgangligt. Apparaten ar konstruerad enligt EN 60950-1.

Denna produkt från MITSUBISHI ELECTRIC är designad och tillverkad av material och komponenter med hög kvalitet som kan återvinnas och återanvändas.
Denna symbol betyder att elektriska och elektroniska produkter, efter slutanvändande, skall sorteras och hanteras separat från Ditt hushållsavfall.
Var snäll och lämna denna produkt hos Din lokala mottagningstation för avfall och återvinning.
Inom den Europeiska Unionen finns det separata insamlingssystem för begagnade elektriska och elektroniska produkter.
Var snäll och hjälp oss att bevara miljön vi lever i!

Anmärkning angående konstruktionen av det övervakningssystem som använder den här enheten

- Denna enhet kan kontrolleras genom externa apparater via RS-232C terminal eller LAN terminal. Denna enhet kan också användas för att kontrollera externa apparater via externa anslutningar, RS-422/485, eller RS-232C terminal. Tack vare dessa funktioner kan enheten på ett flexibelt sätt anpassas till avancerade säkerhetssystem, men det är också viktigt att komma ihåg att hela övervakningssystemet kan påverkas av funktionsstörningar hos den här enheten eller de externa apparaterna, som beror på innehållet i de inställningar som görs på den här enheten, eller på anslutningen mellan eller kombinationen av externa apparater.
- Vid uppsättningen av ett övervakningssystem med den här enheten rekommenderar vi att du först kontrollerar att enheten fungerar normalt med de andra apparater som är anslutna eller används i kombination med enheten respektive systemet.
- Vi rekommenderar att viktigt inspelat innehåll kopieras eller säkerhetskopieras till de andra apparaterna med jämna mellanrum.
- Skador som uppstått på grund av felaktig användning/drift av övervakningssystemet, eller förlust av data eller andra skador som beror på funktionsstörningar hos den här enheten täcks ej.
- Använd inte enhetens rapporteringsfunktion för livsviktiga avgöranden eller i syfte att rädda människoliv.
- Om denna enhet inte kan detektera en extern enhet, som används för inspelning, som resultat av ett strömavbrott, för låg spänning eller ett annat fel, kan inspelningen flyttas över till den inbyggda hårddisken eller en annan hårddisk. För att motverka att denna typ av problem inträffar rekommenderas användning av en strömavbrottssäker strömförsörjning (s.k. UPS).
- Om stickproppen kopplas loss eller brytaren stängs av under pågående inspelning, kan hårddisken skadas och det kan bli omöjligt att spela upp inspelade data. Om brytaren slås på och stängs av varje dag, ska du ställa in timerinspelningen så att funktionen endast aktiveras då brytaren är på och se till att brytaren inte stängs av under inspelning.

Det kan förekomma fall då enhetens funktion för MOTION DETECTION (RÖRELSEDETEKTERING) inte fungerar ordentligt på grund av yttre omständigheter, videoingångssignal eller andra faktorer.

Användaren får inte ersättning för problem (t ex misslyckad inspelning eller uppspelning) som uppstår under drift med själva enheten eller en ansluten enhet. Därför rekommenderar vi att användaren regelbundet gör säkerhetskopior av viktiga inspelningar till skydd mot eventuella haverier och olyckor.

Inspelningstid och produktgaranti

Då du använder denna enhet, gäller indikationen om oavbruten inspelningstid och total tid på menyskärmen den oavbrutna inspelningstiden och inte garantiperioden. På samma sätt, gäller indikationen inte funktionsgarantin för de använda komponenterna.

- I denna enhet är en hårdvara inbyggd som är en precisionsapparat. Var därför mycket försiktig vid hantering av denna enhet.
- Undvik att skaka eller stöta denna enhet häftigt. Om man gör sådant speciellt under tiden enheten är strömförd eller under åtkomst till hårdvaran kan fel uppstå i enheten.
- Drag aldrig ut stickproppen till nätströmmen under inspelning/återgivining eller under tiden enheten är ströförd.
- Det rekommenderas att låta underhålla enheten minst en gång varje år, så att eventuellt fel kan åtgärdas så tidigt som möjligt.

Enhetens hårddisk och kylfläkt använder mekaniska delar. För en varaktig inspelningsfunktion rekommenderas byte av dessa delar var 30000: e arbetstimme.
(Detta utbytesintervall är endast en referens och hänrvisar inte till delarnas garantiperiod.)

FRISKRIVNINGSKLAUSUL

Mitsubishi åtar sig under inga omständigheter ansvar för något av följande:

1. Isärtagning, reparation eller modifikation av denna enhet av användaren eller en installatör.
2. Fel eller funktionsavbrott i denna enhet som beror på fel eller vårdslös användning av användaren eller installatören.
3. Olägenheter eller skador som uppstår som resultat av oförmåga att visa eller spela in bilder av annan anledning än fel eller funktionsavbrott i denna enhet.
4. Fel som uppstår i denna enhet beroende på användning tillsammans med annan utrustning från en annan tillverkare eller skador som uppstår som följd av sådant fel.
5. Olägenheter, skador eller skadeståndsanspråk som följd av funktionsavbrott i denna enhet eller förlust av inspelade videodata till följd av byte av hårddisken av användaren eller en installatör.
6. Olägenheter eller skador som uppstår som resultat av funktionsavbrott i denna enhet eller oförmåga att visa eller spela in bilder på grund av naturkatastrofer, inklusive jordskalv och oväder.
7. Olägenheter, skador eller skadeståndsanspråk som följd av funktionsavbrott i denna enhet eller förlust av inspelade videodata till följd av att hårddisken utsatts för stötar eller vibration eller för andra miljöfaktorer, som exempelvis temperaturen på installationsplatsen.
8. Skadeståndsanspråk eller andra anspråk i förbindelse med kräkning av personlig integritet i de fall de bilder som övervakas eller spelas in av användaren offentliggörs eller används för andra ändamål än övervakning oavsett anledningen.

PLATS FÖR INSTALLATION OCH HANDHAVANDE

- Placera denna enhet på ett horisontalt och stabilt underlag. Om denna enhet används på ostabilt underlag kan det hända att enheten skadas, så som att DVD/CD disken inte går att ta ut.
- Placera inte denna enhet nära annan utrustning. Annan utrustning och denna enhet kan ha dåligt inflytande på varandra och bild eller ljud från denna enhet kan bli förvrängt.
- När en monitor och denna enhet placeras vertikalt kan bilden komma att förvrängas eller kommer DVD/CD disken inte att gå att ta ut.
- För inte in dina händer i diskinmatningsluckan. Det kan hända att händerna fastnar i luckan och du kan skada dig. Om du fastnar med händen dra inte ut den med våld. Kontakta din återförsäljare efter det att du stängt av strömmen och dragit ur sladden.

DVD/CD DISK

- Använd inte diskar som har sprickor, är deformerade eller lagade med lim. Disken kan gå i bitar och orsaka skada.
- Vidrör inte ytan för uppspelning när du håller i disken.
- När kondens uppstått på disken torka av ytan innan användning.
- Smuts så som fingeravtryck eller damm förorsakar försämring av bildkvalitén och ljudkvalitén. Torka försiktigt DVD/CD skivan från mitten och utåt med en mjuk trasa.
- När disken är väldigt smutsig, fukta en trasa med vatten och vrid ur den ordentligt, torka försiktigt bort smutsen, torka sedan med en torr trasa.
- Använd inte lösningsmedel som tvättbensin och tinner, skivrengörare och antistatiska medel. De kan skada disken.
- Använd inte diskar beskrivna nedan. De kan skada själva disken eller denna enhet.
  Diskar med en bit papper eller etikett på eller som är skadade.
  Diskar med flagnad eller trasig etikett.
  Diskar som har sprickor, är deformerade, eller lagade med lim.
- Förvara disken i för den avsett fodral, undvik följande platser.
  Platser där den kan komma att utsättas för direkt solljus.
  Mycket smutsiga platser.
  Platser med mycket höga temperaturer eller luftfuktighet.
- Filmmjukvara i handeln eller privat inspelade bilder kan inte spelas upp i denna enhet. Endast bilder inspelade med denna enhet kan spelas upp.
- Använd inte en skiva som har använts på en dator eller en skiva på vilken kopiering har misslyckats eller avbrutits under kopiering som resultat av ett strömavbrott, eftersom skivan kan orsaka fel i enheten.
- Fastän det går att kopiera data från en DVD/CD med denna apparat och även spela samma data på en persondator med den medföljande programvaran, så finns det ingen garanti för att alla persondatorer och DVD/CD-enheter kan spela denna typ av data.

UNDERHÅLL AV LINSEN FÖR INSPELNING/UPPSPELNING (LASER PICKUP)

- När smuts fastnar på linsen för inspelning/uppspelning kan det förekomma att bilden förvrängs eller ljudet hoppar. Normal inspelning eller uppspelning blir omöjligt. Kontakta din återförsäljare för rengöring.
  Rengöringsdiskar som återfinns i detaljhandeln kan förstöra linsen. Använd inte dessa.

FÖRSIKTIGHETSÅTGÄRDER ANGÅENDE EXTERNA ENHETER

- Man kan ansluta flera hårddiskar till denna apparat för att utöka dess minne eller i kopieringssyfte.
  Observera dock att bilder kan förloras under in- eller avspelning med hög hastighet på grund av den relativt långsamma överföringshastigheten eller svaret från den anslutna externenheten. För bäst resultat uppmanas du att på förhand kontrollera in- och avspelningsfunktionerna.
- Använd inte den externa enhetens elkontroll, eftersom den använder bussen på denna apparat.
- Det kan hända att den externa enheten inte passar för den uppgift du vill den ska utföra. Innan du köper den, bör du därför rådfråga återförsäljaren av den externa enheten.

Varning
Detta är en klass A-produkt. Detta innebär att den vid användning i hushåll kan orsaka radiostörningar, i vilket fall användaren uppmanas att ta nödvändiga åtgärder.

KLASS 1 LASERPRODUKT

UK
Mitsubishi Electric Europe B.V.
UK Branch Office
Visual Information Systems Division
Travellers Lane Hatfield Herts AL10 8XB

Telephone: +44 (1707)-278 684
Fax: +44 (1707)-278 541

GERMANY
Mitsubishi Electric Europe B.V.
German Branch Office
Electric Visual Systems
Gothaer Str. 8 40880 Ratingen Germany

Telephone: +49 (2102)-486 9250
Fax: +49 (2102)-486 7320

SPAIN
Mitsubishi Electric Europe B.V.
Spanish Branch Office
Ctra. de Rubi, 76-80 Apdo.420
08190 Sant Cugat del Valles
(Barcelona) SPAIN

Telephone: +34 (93)-565 3154
Fax: +34 (93)-589 4388

FRANCE
Mitsubishi Electric Europe B.V.
French Branch Office 25,
Boulevard des Bouvets 92741 Nanterre
Cedex

Telephone: +33 (1)-5568 5500
Fax: +33 (1)-5568 5731

ITALY
Mitsubishi Electric Europe B.V.
Italian Branch Office
Centro Direzionale Colleoni
Palazzo Perseo - Ingresso 2, Via
Paracelso 12, 20041 Agrate Brianza, Italy

Telephone: +39 (039)-605 31
Fax: + 39 (039)-605 3214

The Netherlands
Mitsubishi Electric Benelux
A Division of Mitsubishi Electric Europe B.V.
Niiverheidsweg 23A, 3641 RP Mijdrecht
Netherlands.

Telephone: +31 (297)-282 461
Fax: +31 (297)-283 936

Sweden
Mitsubishi Electric Scandinavia
Hammarbacken 14 Box750 SE-191 27
Sollentuna
Sweden

Telephone: +46 (8)-625 1000
Fax: +46 (8)-35 1132

Ireland
Mitsubishi Electric Ireland
A Division of Mitsubishi Electric Europe B.V.
Westgate Business Park, Ballymount,
Dublin 24. Ireland

Telephone: +353 (1)-419 8800
Fax: +353 (1)-419 8895

872C415D3